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JAPANESE EXPLOSIVE ORDNANCE

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NAVY DEPARTMENT

BUREAU OF ORDNANCE

WASHINGTON 25, D. C.

14 June 1946

ORDNANCE PAMPHLET 1667

JAPANESE EXPLOSIVE ORDNANCE

1. Ordnance Pamphlet 165 describes and illustrates Japanese explosive ordnance. It covers bombs, bomb fuzes, land mines, grenades, firing devices, sabotage devices, and ammunition.

2. Ordnance Pamphlet 1667 is intended to prove the general descriptions of these fields of ordnance for instructional and informational purposes.

3. This publication supersedes the publications on Japanese explosive ordnance issued by the United States Navy Bomb Disposal School which should be destroyed.

O. F. HUSSEY, Jr.
Vice Admiral, U. S. Navy
Chief of the Bureau of Ordnance

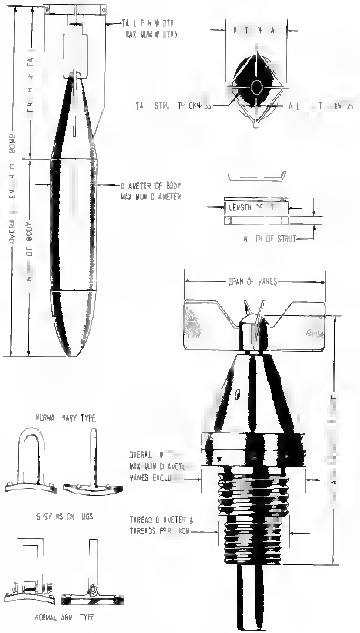


Figure 7—Definitions of Terminology

JAPANESE AMMUNITION—EXPLANATORY NOTES

Japanese Weapons

1. The bore diameter of Japanese Army weapons measures an even number of millimeters (metric system). However the guns are designated by their nominal sizes, usually to the nearest even centimeter.

2. The bore diameter of Japanese Navy weapons quite often measures to an even inch in keeping with the English system, though some common Navy guns are designated with a bore diameter in an even number of millimeters. The Navy also designates its guns by nominal sizes, usually to the nearest even centimeter.

3. To avoid confusion ammunition is classified in this book by the nominal bore size of the weapon according to the Japanese nomenclature with the actual size given in parentheses. Either a nominal bore above 9-mm the actual size is given in both metric and English measurements.

4. Both Navy and Army designate the size of guns and ammunition by the actual size in millimeters, e.g. 47 mm, 40 mm, 90-mm, 20 mm.

Classification of Projectiles

1. Army Projectiles

The Japanese nomenclature for projectiles is followed as far as practicable. The Japanese Army terminology is self-explanatory and conforms fairly well with U. S. custom.

Needing some explanation are the terms A. P. and A. P. H. E.

A. P. indicates a projectile intended for piercing heavy armor for example armor plate of thickness equal to or greater than the caliber of the projectile. These projectiles have an H. E. bursting charge.

A. P. H. E. indicates a solid-nosed projectile in general similar to the A. P. but designed for much lighter penetration. These carry an H. E. charge approximating that of a standard H. E. projectile. Hence the term A. P. H. E. is intended to indicate a intermediate status between an H. E. projectile and a heavy armor piercing projectile. A. P. H. E. projectiles are marked Pro H. E. projectiles but obviously they may be differentiated by their form.

2. Navy Projectiles

The classification and designation of Navy projectiles by the Japanese is highly irregular and cumbersome. Complete and accurate identification of a projectile requires designation of the gun description of a projectile and rank for type and modification number.

Example 14 cm/50 Ordinary
(Gun) (General type of projectile)
Type 0
(Design number)

For this reason an arbitrary system of nomenclature is used in this book. Japanese Navy nomenclature is given as a sub title where known.

In Japanese Navy nomenclature all projectiles with a relatively high explosive charge including flash or ice piercing types are designated "SE.KOU Dn" which may be translated either Ordinary Projectile or Common Projectile. Since this to complicate group including standard high explosive projectiles as well as high penetrating types, this translation "Ordinary" is used in the book for Japanese designations and the term "Common" is reserved for specific use as a descriptive title for high penetrating types of projectile (solid cone, base fused) in accordance with the U. S. meaning of "Common". Projectiles having a point detonating fuze are designated "High Explosive" to conform with U. S. terminology.

Abbreviations

The following abbreviations will be used in this section:

A. A. M. G.	Antiaircraft Machine Gun
A. C.	Aircraft Cannon.
A. C. M. G.	Aircraft Machine Gun
A. P.	Armor-Piercing
A. P. I.	Armor-Piercing Incendiary
A. P. T.	Armor Piercing Tracer
A. T. K.	Antitank
H. E.	High Explosive.
H. E. A. T.	High Explosive Antitank (Hollow Charge)
H. E. I.	High Explosive Incendiary
H. E. I. T.	High Explosive Incendiary Tracer
H. E. T.	High Explosive Tracer
H. M. G.	Heavy Machine Gun
I.	Incendiary
I. T.	Incendiary Tracer
L. M. G.	Light Machine Gun
M. K.	Mark
MOD.	Modification
S. D.	Self Destructing
T. K.	Tank
W. P.	White Phosphorus.

Chapter

JAPANESE BOMBS

Introduction

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Chapter —Section

JAPANESE ARMY BOMBS

Designation

[illegible]

[illegible]

[illegible]

[illegible]

ARMY EXPLOSIVES

Explosive	Use	[illegible]	Remarks
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible] be illustrated [illegible] [illegible] [illegible]

Figure 9—Type 95 15-kg. High-Explosive Bomb.

Type 95 15-kg. High-Explosive Bomb.

Power [illegible] 4 [illegible] A-7 (d)
O [illegible] Number 18 [illegible]
Length of body 55 inches.
Diameter of body 15 inches.
Weight of bomb 15 kilos.
Material of wall Sheet steel (Nos. 1[illegible]).
Type of Suspension [illegible] and Jettison lug.
Suspension lug Vertical Array suspension lug.
Jettison pulley Hinged stand lug on [illegible] fastened to body with hinge [illegible] pulley and [illegible] fastened by screw [illegible].
Other accessories Hook, rear sill with and hand key and rear cone and a metal hand and yellow hand lever of the suspension lug. Other hand may be missing.
Length [illegible] 6[illegible]
Width of tail 15 inches.
Length of tail 15 inches.
Dimensions of nose cone Length, 18 inches width 9 inches diameter, 6 inch.
Material of nose Sheet steel.
Type [illegible] Filling 3 pounds. Name of picric acid. Explosive fill [illegible] of the WAT.
Weight of filling [illegible] pounds [illegible].

[illegible]

Construction of body: [illegible]

Construction of tail: [illegible]

Type 9[illegible] [illegible]-kg High-Explosive Bomb

[illegible]

Construction of body: [illegible]

Construction of tail: [illegible]

Remarks: [illegible]

Type 9[illegible] [illegible]-kg, Type 9[illegible] and Type [illegible] [illegible]-kg High-Explosive Bombs

[illegible]

Figure [illegible]—Type 9[illegible] [illegible]-kg High-Explosive Bomb

Type 94 Modified and Type [illegible] (Kg.) H. E. Bombs

[illegible]

Figure [illegible]—Type 94 Modified and Type [illegible] Kg. [illegible] High Explosive Bombs.

Type 91 (Model 5) will fuze grenades in use already threaded.

Type 91 (old type) is for use with chemical shell when an accurate burst is required.

Construction of shell. Four fins are welded to the tail cone and formed by two type stamping dies as for 10-kg. bomb and a flexible cut for filling hopper. A nail tracer is fitted in the cone of the tail of the bomb.

Type 2 250-kg. High-Explosive Bomb

Fuze	Cl-2 (or 3)
Over-all length	1[illegible] inches
Length of body	[illegible] inches
Diameter of body	[illegible] inches
Thickness of wall	[illegible] inch
Material of wall	Tubular steel
Type of explosive	Trinitrotoluol
Suspension lug	Integral design
Color and markings	Black wrap-all. Dull [illegible] and red nickel band (Model) forward of suspension stud lug. [illegible] in red band on top of rear [illegible] of tail. [illegible] inches.
Width of tail	[illegible] inches
Length of tail fins	[illegible] inches
Dimensions of tail stems	Length [illegible] inches; width [illegible] inches; thickness [illegible] inch
Method of [illegible]	[illegible]
Type of filling	Pressed, paper-wrapped pure trinitrotoluol with nickel blocks.
Method of [illegible]	Fill [illegible]
Weight of [illegible]	[illegible] pounds
Characteristic marks	[illegible]

Construction is better. A cast-steel nose piece is screwed into the tubular body. The tail cone is welded to the fore end of the body. The nose piece has a hole [illegible] to accommodate the Cl-2 (or 3) fuze base.

Construction of tail. Four fins are welded to the tail cone and formed by two sets of hot-type stamps. Non-adhesive is used for the wrap of the tail stem. The tail is of proper [illegible] length and flow are similar given.

Type 92 250-kg. and 500-kg. High-Explosive Bombs

Model No. 1	Model No. 2-6	Model No. 7-8
Over-all length	78 inches	[illegible] inches
Length of body	[illegible] inches	[illegible] inches
Diameter of body	[illegible] inches	[illegible] inches
Thickness of wall	[illegible] inch	[illegible] inch
Material of wall	Tubular steel	
Type of explosive	Trinitrotoluol	
Suspension lug	Integral	
Color and markings	Dull [illegible] Type [illegible] on all [illegible] and [illegible] nose and tail; yellow nail and white band down of suspension lug.	

Figure 8—250-kg. Mark-Exploiter Bomb.

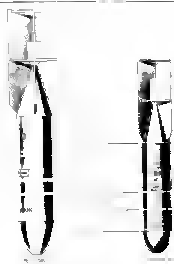


Figure 2.—Type FC 100-lb. and 200-lb. Mob Gas fire bombs.

FC 100	FC 1.5	FC 100	FC 200
Length of FC 100	100 inches	Weight of filling	of gasoline.
FC 100 of cell	100 inches.	Total weight of bomb	100 gasoline.
FC 100 of cell	100 inches.	Gross weight	200 gasoline.
FC 100 of cell	100 inches.	Marker bomb	5

Length of FC 100 of cell ... 100 inches.
FC 100 of cell ... 100 inches.
Marker bomb ... 5 [illegible]
Weight of filling ... [illegible]
Total weight of bomb ... [illegible]
Gross weight ... [illegible]

Construction of bomb ... [illegible] sheet-metal container to [illegible] and hydrocarbon fuel. A [illegible] or welded for [illegible] [illegible]

Construction of ball. [illegible] in the [illegible]. This [illegible] of the [illegible] of the [illegible]. In this [illegible] are the [illegible] compared to [illegible] characteristic [illegible] the [illegible].

[illegible]

Type 3 (1914) Grenade Bomb

[illegible]

Construction of ball. [illegible]

Construction of tail. [illegible]

[illegible]

[illegible] 3 250-lb. [illegible] Model Bomb

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Type of suspension: [illegible]
Suspension lug: [illegible] Army type [illegible]
Color and markings: Black over all [illegible] [illegible] forward of [illegible]
Length of tail: [illegible] inches.
Width of tail: [illegible] inches.
Width of tail fins: [illegible] inches.
Dimensions of [illegible]: Length, [illegible] thickness, [illegible]
Material of tail: Steel.
Type of filling: Paper wrapped [illegible]
Weight of filling: [illegible] pounds.
Total weight of bomb: [illegible] pounds.
Charge/weight ratio: [illegible]

Construction of body. [illegible]

Construction of tail. [illegible]

Figure 9—Type 3 250-lb. [illegible] Model Bomb

[illegible]

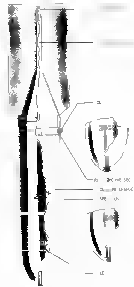
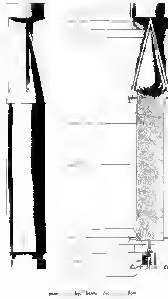


Figure 6—Type 98 Ash. M Ash. and SAP-Ig. Antiaircraft Shells.

[illegible] -lb. Anti-Shipping Bombs

[illegible]



Jap. Thermite Incendiary Bomb

[illegible]

Color and markings: [illegible]

[illegible]

Total weight of bomb: [illegible]

Construction of body. [illegible]

Operation. [illegible]

1-kg. Thermite Incendiary Bomb

[illegible]

Color and markings: [illegible]

[illegible]

Total weight of bomb: [illegible]

Construction of body. [illegible]

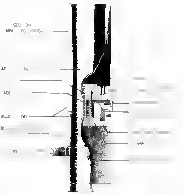


Figure 9—5.9. Marine foundation bomb.

Construction of bomb. The oil, containing a wound about steel tube fitted to the other end is secured to the wooden block by the wood screws. The [illegible] wooden block, by the wood screws. The [illegible] and is manufactured containing the wooden block as bomb may be adjusted. A stop is fitted to receive the bomb while you loosing of the cut short in the wooden block.

Operation. When it is [illegible] released by [illegible] mitted safety pin to fly out [illegible] On impact the striker [illegible] [illegible] bomb, to the marine. The explosion of [illegible] pulse that the fire charge and [illegible]

Type 97 Mk4 Depth bomb (Marine foundation)

Diameter of bomb	[illegible]
Overall length	[illegible]
Diameter of tube	[illegible]
Diameter of tube	[illegible]
Thickness of wall	[illegible]
Material of wall	Steel
Type of impactor	Horizontal

[illegible] 14. [illegible] [illegible] when inflated [illegible] [illegible] of the [illegible] boat.

Color: [illegible] [illegible] [illegible] [illegible] [illegible]

Length of raft: [illegible] inches.

Width of raft: [illegible] inches.

Width of raft tube: [illegible] inches.

Dimensions of raft when [illegible]: [illegible] inches.

Material: [illegible] [illegible]

Type of fitting: [illegible] [illegible] [illegible]

Weight: [illegible] [illegible] pounds.

Total weight of raft: 30 pounds.

[illegible] weight: [illegible] 20 pounds.

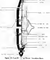


Figure [illegible] [illegible] Pneumatic [illegible] Boat.

Construction of body. It is of steel, [illegible] [illegible] suspension lug and [illegible] suspension [illegible] are fixed to the body. The [illegible] consists of two [illegible] bands [illegible] [illegible] [illegible] welded to the [illegible] [illegible] [illegible]

Construction of tail. Four fins [illegible] welded to the tail [illegible] [illegible]

Operation. [illegible]

Remarks. The [illegible]

Type 97 [illegible] Incendiary Bomb

Name: Navy [illegible] Type 97 [illegible]
Over-all length: [illegible] inches
Length of body: [illegible]
Diameter of body: [illegible] inches
Thickness of wall: [illegible]
Width of tail: [illegible]
Type of suspension: Horizontal.
Suspension lug: [illegible] suspension lug.
Color and markings: [illegible]
Length of tail: [illegible] inches
Width of tail: [illegible]
[illegible]
Charge: [illegible]
Type of filling: [illegible] rubber [illegible]
Weight of [illegible]
Total weight of bomb: [illegible] pounds
Charge/weight ratio: [illegible] percent

Construction of body. [illegible]

Construction of tail. Four [illegible] fins are welded to the tail [illegible]

Remarks. This bomb [illegible] designed [illegible]

Figure 4.—Type 90 50-kc. incendiary bomb.

Type 00 50-kg Incendiary B Bomb

Weight: 50 kg (110.3 lb)
Overall length: [illegible] mm
Length of body: 350 mm
Diameter of body: [illegible] mm
Thickness of wall: [illegible] mm
Material: Steel
Type of stabilizer: Horizontal
Horizontal fin: Spotted dummy type.
Vertical fin: Spotted dummy type. Cross covered with [illegible] mm thick asbestos sheet and [illegible] mm thick canvas sheet.
Length of tail: [illegible] mm
Width of tail: [illegible] mm
Width of tail base: [illegible] mm.
Dimensions of tail pipes: Length 442, outer diameter [illegible] mm, thickness [illegible] mm.
Material of tail: Steel.

Type of filling: 400-450 rubber balls (1 inch) long for [illegible] incendiary impregnated with phosphorus. Material: dry rubber, dextrine. The impregnated charge is the same material as [illegible] in a metal tube.
Weight of charge: Incendiary filling 24 pounds, [illegible] charge [illegible]
Total weight of bomb: 67 pounds
Charge [illegible] water is poured.
Construction of body: Main assembly: hold [illegible] three parts, [illegible] about a thick [illegible] T. Other assembly: [illegible] metal, body by [illegible] welding. Material: [illegible] of [illegible] tube. Upside is [illegible] welding plate and the front is made straight by [illegible] welding. A tail cone is welded to the rear end of the body.
Construction of tail: Fins fitted [illegible] in vertical to the tail cone, tail are brazed by welding are of iron-type alloys.

Figure 34—Type 50 50-lb. Smoke Bomb.

Type 50 50-lb. Smoke Bomb

Power A-6-D. Air ... A-6-D.
O ... cold weather ... 6 ... ignite ... body ... 10 seconds.
Dispersion of body ... uniform.
Dispersion of smoke ... 3 yards.
Weight of smoke ... 50 lb.
Type of ignition ... Horizontal.
Remarks ... A normal Army appearance as illustrated by accompanying head.
Color and markings. Gray over-all with the usual red and green. Yellow and blue band painted "P" was overlaid at white on the body.
Length of shell 18 inches.
Width of fins 10 inches.
Weight of fins 1 lb. each.
Dimensions of nose cone. Length, fifty inches; width 3 inches; thickness, 3 inch.
Material of nose cone. Sheet steel.
Type of filling. Hydrochloric acid and hexachloroethane mixed ... powder and calcium carbonate powder and 3 percent.
Weight of filling. Chemical filling ... pounds.
Highest explosive filling ... pounds.
Total weight of bomb ... pounds.
Composition of filling. Powder.
Remarks. Ignition of the chemical mixture is built by three screws on the steel ignition plate. The ignition screws is the steel ignition plate is welded to a wooden-steel body by a wooden screw threaded with a brazing tube containing pure steel threads steel of ignition plate. A fin cross is welded on the fins and is shown.
Method of ignition of bell. The steel fins are welded, the fins are made and are located by single row of hot type screws.

Figure [illegible]—Type 93 [illegible] Gas Grenade [illegible] Gas Bomb

[illegible]

Overall length of body: [illegible] inches

Diameter of body: [illegible] inches

[illegible]

[illegible]

Type of suspension: Horizontal

[illegible]

[illegible]

[illegible] of [illegible] [illegible] pounds

[illegible]

Type of filling: [illegible]

Total weight of bomb: [illegible] pounds

[illegible] 81 [illegible]

Construction of body. [illegible]

Construction of [illegible]. [illegible]

Type 94 [illegible] Model [illegible]

Overall length of [illegible]

Diameter of [illegible]

Overall length of [illegible] body: [illegible]

Diameter of [illegible] body: [illegible]

[illegible] Nose used

Type of suspension: [illegible]

Type of filling: [illegible]

[illegible]

Description. [illegible]

[illegible]

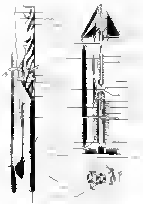


Figure 16—Type 90 Small Model Parachute Flare

[illegible] through the [illegible] and [illegible] the form of a cylinder. The rear of the [illegible] Surface [illegible] the parachute is [illegible] and the [illegible] wrapped [illegible] the [illegible]. Two [illegible] and [illegible] held [illegible] the [illegible] through [illegible] of the [illegible] and [illegible] the [illegible] of the [illegible] the [illegible] tube [illegible]. The [illegible] space [illegible] to [illegible] the [illegible] and [illegible] to the

end of [illegible]. The [illegible] is crimped over the [illegible] hole in the [illegible] to [illegible] the case and [illegible] screws.

The [illegible] filling [illegible] between the [illegible] the ignition charge [illegible] the fuze. Several rolls of [illegible] the [illegible] tube [illegible] the filling [illegible] of the fuze [illegible]. The ignition charge [illegible] below the [illegible] filling.

Operation. The case [illegible] removed and the [illegible] cylinder [illegible]. The [illegible] removed from the cylinder [illegible] and the flare is dropped from the plane. The

[illegible] the [illegible] of the [illegible] [illegible] [illegible]. The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of copper [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] Bangalore Pipe

[illegible] 100-kg Bangalore Pipe

Fuze: [illegible]

Overall length: [illegible] inches

Length of body: [illegible] inches

Diameter of body: [illegible] inches

Thickness of wall: [illegible]

Material of wall: [illegible]

Type: [illegible]

[illegible]

Color and marking: [illegible]

Length of tail: [illegible] inches

Width of tail: [illegible] inches

Width of fin: [illegible]

[illegible] of tail: [illegible]

Material of tail: [illegible]

Type of filling: [illegible]

Weight of filling: [illegible] pounds

Total weight of bomb: [illegible] pounds

[illegible] weight: [illegible] pounds

[illegible] The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

Bore .45
or 455
Magazine 8
Rapidfire
Parabell

Type 5 Pistolbute Horse

Frame. O-S-O.
Overall Length 13 inches.
Length of barrel 8½ inches.
Diameter of barrel .65 inches.
Thickness of wall ⅛ inches.
Material cast iron.
Type of magazine. Horizontal.
Capacity of magazine 7 and Army type to get — position by
Inter magazine Dial rod .8 ⅛
Length of bolt 8 ⅛ inches.
Width of rod one inches.
Diameter of rod stroke left while be
Inch. 15 series needs slightest.
Weight of rod 1 pound 3 oz.
Type of firing. Instinct.
Weight. 10 lbs. 6 oz.
Total weight of trade 10 lb.

Construction of Body. The dura consists of spun aluminum. the dura case, 15 ⅛ ⅛ ⅛ and big handle and 13 in the parallelum.

The dura case consists dura metal in aluminum, bolt and end cap. The magazine is supported securely to the body and the bore spherical seat cap is bolt position by spun aluminum in the dura. The bolt has an embed in the magazine of the body. A steel ring is fitted to the bolt and the bolt is provided with a bolt cover. It is secured in the bolt and serves to brace bolt well in to round the stirrup of the frame finish. The cover threaded to cover the bolt.

2. The Hammer is centered in a cylinder, cylinder which is covered by short lever. The side plate, lever and is fixed to a steel plate bolt to screw on the cylinder. A Search ears rear 10 inches long drive which the mark was is supported is attached to the side plate by screws all should. Several side of the screws

Figure 10 Arm 5 Pistolbute Horse

to per ed. is optical. Modern Mach weapon. The Dura case is open the case be cover an pistols change before drawer and 1 arch Mach

	Machine
Length. Horizontal cylinder	
Length of 5 weapon	7½
Diameter of Hammer	⅝

[illegible] There is [illegible] [illegible] located [illegible] the [illegible] [illegible] [illegible] [illegible] at [illegible] of [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Figure [illegible] Type 97 [illegible] Concrete Bomb

T [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Type 97 5-Kg. Concrete Bomb

[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]

Length of bomb [illegible]

Diameter of body [illegible] inches.

Thickness of wall [illegible] inch.

[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] Horizontal or vertical

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Length of tail [illegible] inches.

Width of tail [illegible] inches.

Width of tail fins [illegible] inches.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Length of filling [illegible] [illegible].

Total weight [illegible].

Construction of body. [illegible].

Construction of tail. [illegible].

Figure 19—Type 94 10-kg. [illegible] Bomb.

Type 94 10-kg. [illegible] Bomb

Fuze: [illegible]
Overall length: 29 [illegible]
Length of body: 16 inches
Diameter of body: 3 inches
Thickness of wall: [illegible] inch (approximately)

[illegible]

Color and markings: [illegible]

Length of tail: [illegible]

Width [illegible]

Width [illegible]

Dimensions of tail [illegible]

Type of filling: [illegible]

Weight of filling: [illegible] pound.

Total weight: [illegible] pounds.

Construction of body. [illegible]

Construction of tail. [illegible]

Type 98 10-kg. [illegible] Bomb

Fuze: [illegible]
Overall length: [illegible] inches
Length of body: [illegible] inches
Diameter of body: [illegible] inches
Thickness of wall: [illegible]
Material: [illegible]
Type of [illegible]
[illegible]
Color of markings: [illegible]
Length of tail: [illegible]
Width [illegible]
Width [illegible]
Dimensions of [illegible]
[illegible]
[illegible]

Figure 13—Type [illegible] 30-kg. Practice Bomb

Type of [illegible] [illegible] [illegible]

Weight [illegible] [illegible]

Total weight [illegible]

Construction of body. The body is constructed of light sheet steel cylinder which [illegible] [illegible] [illegible] [illegible]. The [illegible] [illegible] the tube and [illegible] [illegible] is filled with [illegible] [illegible] [illegible].

The [illegible] [illegible] is welded to the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

The [illegible] [illegible] is welded to the [illegible] and [illegible] [illegible] [illegible].

Construction of tail. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Remarks. The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Type 99 [illegible] Practice Bomb

Name: [illegible]

Overall length: [illegible] inches.

Length of [illegible]: [illegible] inches.

Diameter of body: [illegible] inches.

Thickness of wall: [illegible] [illegible] [illegible] [illegible].

Material of wall: [illegible] [illegible], [illegible] [illegible].

Type of suspension: [illegible]

Suspension lug: [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]

Length of [illegible]: [illegible] inches.

[illegible] [illegible] inches.

[illegible] [illegible] [illegible]

Construction of [illegible] [illegible] [illegible]

Material: [illegible] [illegible]

Type of filling: [illegible] [illegible] [illegible]

Weight of filling: [illegible]

Total weight of [illegible] [illegible]

[illegible] by Thermit Bomb

[illegible]

[illegible]

Construction of bomb. [illegible]

Operation. The [illegible]

Type [illegible] Thermit Bomb

Case: [illegible]

Overall length: [illegible] inches

Length of body: [illegible] inches

Diameter of body: [illegible] inches

Thickness of wall: [illegible]

Material of wall: [illegible]

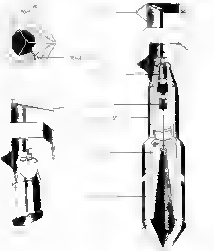
Type of suspension: [illegible]

[illegible]

Weight of filling: [illegible] pounds

Total weight of bomb: [illegible] pounds

Construction of bomb. The cylindrical steel body [illegible]



[illegible] Cluster Bomb

Construction of [illegible]

[illegible]

[illegible] a distance of 15 to [illegible]

[illegible]

Type 3 Spike Cluster Bomb

Fuze: [illegible]
[illegible] weight: 15 kg [illegible]
Length of body: [illegible] inches.
Diameter of body: [illegible] inches.
Thickness of wall: [illegible] inch.
[illegible]

Figure 2-[illegible] Type 3 Spike Cluster Bomb.

[illegible]

Weight of filling: [illegible] pounds.
Total weight: [illegible] pounds.
Charge/weight ratio: [illegible] percent.

Construction of body. The body consists of [illegible] which is welded [illegible]

Construction of tail. Four tail fins [illegible] welded to the base of the body. [illegible] a single [illegible]

Remarks. [illegible] this bomb is the construction which permits it [illegible] the case of one bomb [illegible] and the [illegible] The pieces of the case and the [illegible] welding [illegible] the length of [illegible]

Type 3 Spike Bomb

Fuze: [illegible]
Overall length: 37½ inches.
Diameter of body: [illegible] inches.
Thickness of wall: [illegible] inch.
Material and type [illegible] welded and [illegible] several sections.
Type of filling: TNT [illegible] percent; [illegible] percent.
Weight of filling: [illegible] pounds.
Total weight of bomb: [illegible] pounds (without fuze).
Charge/weight ratio: [illegible] percent.

Description. The bomb consists of [illegible] and [illegible] and two [illegible] The bomb [illegible] made of one piece [illegible] there are [illegible]

Figure [illegible] Bomb

Nose. The nose was enclosed by [illegible] welded [illegible] A retaining [illegible] welded onto the shell. The [illegible] [illegible] [illegible]

[illegible]

The parachute assembly consists of the main parachute attached to the auxiliary parachute which is [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the bomb.

The [illegible] [illegible] [illegible]

Operation. The bomb is designed for use in [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

As soon as the bomb starts to fall through the air the parachute [illegible] [illegible] [illegible] [illegible]

When the plane [illegible] [illegible] [illegible] [illegible]

Bowie

Diameter of hilt .350 in. Length of blade 10 in.
Total length 15 in. Weight of blade 1 lb.
Thickness of blade .25 in.

Type of blade: Single edged, clip point.
Length of blade: 10 in.
Length of hilt: 5 in.
Width of hilt: 1 in.
Width of hilt flat: 1 in.
Thickness of hilt at end: .5 in.
Material of hilt: Plastic.
Type of blade: Clip point.
Weight of blade: 1 pounds.
Total length of blade: 10 inches.
Overall length: 15 inches.

Bowie

Construction. This [illegible] is believed to be [illegible] air-dropping [illegible] of corrugated sheet steel. [illegible]

[illegible]

[illegible]

Figure 19—Container for 30 Type 1 [illegible] Bombs

[illegible]

Operation. [illegible]

Remarks. [illegible]

Container for 30 Type 1 [illegible] Bombs

Fuze: None
Overall length: [illegible] inches
Length of body: [illegible] inches
Diameter of body: [illegible] inches
Thickness of wall: [illegible]
Material of body: Corrugated sheet steel
Type of suspension: [illegible]
[illegible]
Tail assemblage: [illegible]
Length of tail: None
Width of tail: None
Width of tail fins: None
Diameter of tail struts: None
Diameter of tail: [illegible]
Type of filling: [illegible]
Weight of filling: [illegible]
Total weight of bomb: [illegible]
Charge/weight ratio: [illegible]

Construction of fuel. [illegible]

[illegible] 18 type 18-kg Brake

[illegible] 18 type 18-kg Brake

Description. [illegible]

[illegible]

[illegible]

[illegible] Aircraft [illegible]

[illegible]

Description. [illegible]

Remarks. [illegible]

50-kg and 100-kg Pumpkin Contrails

[illegible]

Construction of bomb. The [illegible]

Construction of tail. [illegible]

Remarks. [illegible]

Figure 8-9. 50-kg and 100-kg Pumpkin Contrails

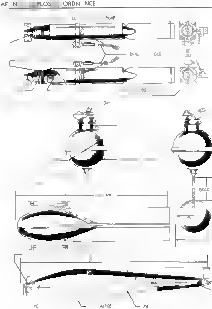


Figure 24—Aldis Lamp on Army Truck

JAPANESE NAVY BOMBS

Introduction

1. Designation

Japanese [illegible] bombs are divided [illegible] classes [illegible] land bombs, ordinary bombs, special bombs, practice bombs, target-marker bombs, training bombs, and dummy bombs.

Land bombs are bombs specially designed for use against land targets. They are usually of single construction.

Ordinary bombs are designed for use against ships. [illegible] They are of [illegible] construction than land bombs.

Special bombs are designed for [illegible] purposes and each special type is indicated by a mark number. [illegible]

According to [illegible] [illegible] bombs [illegible]. The [illegible] bombs [illegible] with numbers as follows:

Marks 1 through 5 — [illegible] bombs
Marks 6 through 9, — [illegible] bombs
Marks 10 through 20 — [illegible] bombs
Marks 21 through [illegible] — [illegible] bombs

[illegible] bombs are [illegible] for [illegible]. Target-marker bombs are [illegible].

Dummy bombs are used [illegible]. Training bombs [illegible].

Practice bombs are used [illegible].

Individual bombs [illegible].

The [illegible] numbers [illegible].

[illegible]

The [illegible] following the weight of the bomb in [illegible] kilograms. Thus the [illegible] bomb weighs [illegible] kg. [illegible]

A description of the bomb [illegible] followed by its dimensions [illegible].

[illegible] Model. [illegible]

[illegible] Modification. [illegible]

2. Construction

There are [illegible] Navy bombs [illegible].

[illegible]

3. Suspension

[illegible]

[illegible]

Fillings

[illegible]

Color and markings

[illegible]

[illegible]

Uses

[illegible]

Fuzing

[illegible]

COLOR MARKINGS OF JAPANESE NAVY BOMBS

[illegible]

Bomb	Color markings		Additional identification
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]			[illegible]
[illegible]		[illegible]	[illegible]
[illegible]			[illegible]
[illegible]		[illegible]	[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]

NAVY EXPLOSIVES

Japanese	Use	Nearest Prototype	Remarks
[illegible]	[illegible]		
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible] 5.—[illegible] of Lord Bonds

[illegible] Number of Lord Bonds

[illegible]

Diameter [illegible]

[illegible]

[illegible] is a [illegible] Horizontal [illegible]

Section [illegible] [illegible]

Color [illegible] [illegible]

[illegible]

Length [illegible]

Width [illegible]

[illegible]

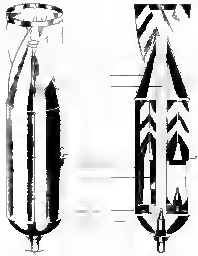
[illegible]

Construction of body [illegible]

[illegible]

Construction of tail [illegible]

[illegible]



Figures 86—7mm 2 No. [illegible] Land Mines Model 5.

Type 5 No. 6 Land Mine Model 5

Diameter	[illegible]
Overall length	[illegible] inches
Length of body	[illegible] inches
Diameter of body	[illegible]

Dash [illegible]

Type [illegible]

[illegible]

Construction of body. [illegible]

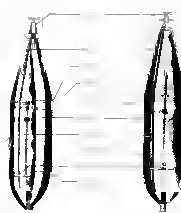
Construction of deck. [illegible]

Propulsion [illegible]

Remarks. [illegible]

No. 1 [illegible] No. 10 [illegible]

[illegible]



[illegible]

of [illegible] length by 40 inches. There is detached to [illegible] and tail.

Cylinder, nose of tail. [illegible] is fill in nose and balance by [illegible] in tail.

Remarks. The type [illegible] bombs and [illegible] in the [illegible] to be. Wind drag to [illegible] attach on the exterior to [illegible].

No. 46 Lard Bomb

Form [illegible] 1918 [illegible] 1921.
Overall length [illegible] inches.
Length of body 79 inches.
Diameter of body 8 inches.
Thickness of wall [illegible] inch.
Material of wall Steel.
Type of suspension Horizontal.
Lugs [illegible] on each side of the body [illegible] one lug [illegible] and one lug [illegible].
Color and markings Olive drab overall. Green around tail stripe. The red band [illegible] part also the longitudinal zone of the body. Blue band around the body. These types belong to [illegible].
Length of tail [illegible] inches.
Width of tail [illegible] inches.
Width of tail fins 10 inches.
Dimensions of tail strain Length [illegible] inches, 24 inches, 8 inch.
Material of tail Steel.
Type of tail Cylindrical, with fins [illegible] to detachable.
Weight of filling [illegible] pounds.
Total weight [illegible] 700 pounds.
Charge weight [illegible] 50 pounds.

Construction of body. Detachable nose is [illegible] cylinder body by [illegible] reinforced with [illegible] [illegible] The tail cone [illegible] by [illegible] metal with [illegible] [illegible] attach tail [illegible] the body [illegible] This bomb has [illegible] [illegible] nose and tail.

Construction of tail. Type [illegible] and [illegible] upon welded on the tail cone and are braced single [illegible] [illegible] in.

Fig. 10—No. 46 Lard Bomb.

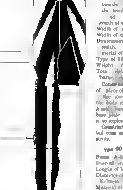


Fig. 1 Type 99 Mk. Ordnance Bomb

Type 99 Mk. A Ordnance Bomb

Name: A ordnance bomb
Overall length: [illegible] inches
Diameter of body: [illegible] inches
Diameter of tail: [illegible]
Thickness of wall: [illegible]
Type of suspension: [illegible]

Stabilization lug: Normal Navy suspension lug
Color: [illegible] markings. Gray paint all metal [illegible] body, tail parts and fins. The [illegible] red paint. Stripes along the length of the body. Show type color markings will be [illegible]
Length of tail: [illegible] inches
Width of tail: [illegible] 25 inches
Dimensions of tail: [illegible] length, [illegible] inches, [illegible] inches, [illegible] inches
Material of tail: Steel
Type of fins: Plate added to type 98 ordnance
Weight: [illegible] 70 pounds
Total weight of bomb: 250 pounds
Water depth: [illegible] 20 meters

Construction of body: The body is made of sheet steel of thickness of [illegible] millimeters. Lugs attached to the body are welded to the body. The tail is welded to the body of the steel assembly in accordance with [illegible] lugs. A [illegible] cone is attached to the base plate by [illegible] screw of 30 diameter. There is no explosive in the tail cone.

Construction of tail: Fins are welded to the tail cone and braced by [illegible] set of brace-type struts.

Type 99 Mk. 15 Ordnance Bomb Model

Name: [illegible] 15 Ordnance
Overall length: [illegible] 50 inches
Length of body: [illegible] inches
Diameter of body: [illegible] inches
Material of body: [illegible]
Material of fins: [illegible]
Type of suspension: Horizontal
Suspension lug: Normal Navy suspension lug
Color and markings: Gray paint all metal [illegible] and green and [illegible]. Red stripe [illegible] and blue [illegible] stripe along the length of the bomb. Show type color markings will be [illegible]
Length of tail: [illegible] inches
Width of tail: [illegible] inches
Dimensions of tail: [illegible] length, [illegible] inches, [illegible] inches, [illegible] inches
Material of tail: [illegible]
Type of fins: Type [illegible] fins in metal
Weight: [illegible]
Total weight: [illegible] 500 pounds
Charge weight: [illegible] pounds

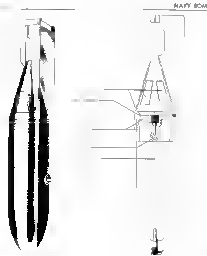


Fig. 49—Type 23 Mk. II Dummy Bomb Shield

[illegible] ing for ed bomb. The bomb is constructed [illegible] Wood frame and [illegible] ter [illegible] from. This still [illegible] bolted vertically to corrugated plate. The base plate is bolted [illegible] all bays [illegible] all tests w[illegible] arranged to be bolt [illegible] ht [illegible] down. The [illegible] is empty and low [illegible] height bomb [illegible] known to the bolt [illegible] or [illegible] to be [illegible] Construction of bolt. Frame [illegible] was welded [illegible] bolt [illegible] of [illegible] angle iron [illegible] ter [illegible] ter [illegible]

Figure [illegible] — [illegible] Bank Model.

[illegible] No. [illegible] Infantry Bank Model

[illegible]

Weight [illegible]

Type

[illegible]

Construction of rail [illegible]

[illegible]

Figure 4[illegible]—No. 50 Ordnance Bomb Model

No. 50 Ordnance Bomb Model

[illegible]

Construction of [illegible]

Construction of [illegible]

Figure 43—No. 3 Delivery Bomb Model 2 and No. 4 Delivery Bomb Model 2

No. 3 Delivery Bomb Model 2 and No. 4 Delivery Bomb Model 2

[illegible]

Weight of [illegible]

[illegible]

Construction of body: The body [illegible] of [illegible] of machined steel [illegible] The base of the [illegible] [illegible]

Construction of tail: The tail [illegible]

No. 52 Ordnance Bomb Model 1

Fuze: Nose [illegible] and [illegible]
Overall length: [illegible] inches.
Length of body: [illegible] inches.
Diameter of body: [illegible] inches.
Thickness of wall: [illegible] inch.
Material of wall: Steel.
Type of suspension: Horizontal.
Suspension lug: [illegible]
Color and markings: [illegible]
Length of tail: [illegible] inches.
Width of tail: [illegible] inches.
Width of tail fin: [illegible] inches.
Dimensions of tail struts: Length, [illegible]
Material of tail: Steel.
Type of filling: [illegible]
Weight of filling: [illegible] pounds.
Total weight of bomb: [illegible] pounds.
Charge/weight ratio: [illegible]

Construction of body: The body is constructed of one piece of [illegible] The [illegible]

[illegible] No. [illegible] Ordnance Bomb Model 1

[illegible]

Construction of tail: The [illegible]

[illegible] Ordinary Bomb Model [illegible]

[illegible] Ordinary Bomb Model [illegible]

[illegible]

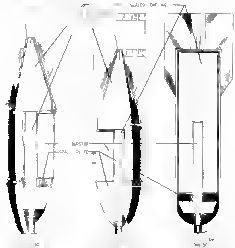
Construction of Bomb. [illegible]

Construction of Tail. [illegible]

No. [illegible] [illegible]

[illegible]

For usual description [illegible]



[illegible]

General description. This bomb was designed [illegible]

[illegible]

Remarks. [illegible]

[illegible]

[illegible] Bomb

Fuze: [illegible]

Overall length: [illegible] inches.

[illegible]

Material of wall: Steel.

[illegible]

[illegible]

Weight [illegible] pounds.

[illegible]

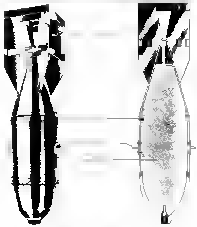


Figure 47.—Type 90 No. 5 MK 2 Bomb.

Action Rattles the nose cone of the body and is held there by [illegible] of screws [illegible] per cent.

Construction of tube. If on tail (the one vertical to the [illegible] tail are [illegible] round by four sets of four tube [illegible].

Remarks. This [illegible] be found with only one set of [illegible].

[illegible]

Type 99 No. [illegible] Mk. 2 Bomb Modification 1

Fuze: A-[illegible]

Over-all length: [illegible]

Length of body: [illegible]

Diameter of body: [illegible] inches

Thickness of wall: [illegible]

Material: [illegible] steel

Type of suspension: Horizontal

Suspension lug: [illegible]

Color and markings: [illegible]

Length of tail: [illegible]

Tail [illegible]

Width of tail fins: [illegible]

Explosive: [illegible]

Material of [illegible]

Type of filling: [illegible]

Weight of filling: [illegible] pounds

Total weight of bomb: [illegible]

Charge/weight ratio: [illegible] percent

Construction of bomb: [illegible]

Construction of tail: [illegible]

Type 9 No. [illegible] Mk. 2 Bomb Model 1

Fuze: [illegible]

Over-all length: [illegible]

Length of body: [illegible]

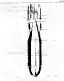
Diameter of body: [illegible]

Thickness of wall: [illegible]

Material: [illegible] steel

Type of suspension: Horizontal

Suspension lug: [illegible]



[illegible]

Color [illegible]

Length [illegible]

Weight [illegible]

Diameter [illegible]

Construction of body [illegible]

[illegible]

Construction of tail. [illegible]

Figure [illegible]—[illegible] No. 25 Mk. 2 Bomb Mark Modification

[illegible] No. 25 [illegible] Model

Mod Bomb

Fuze: [illegible]

Overall length: [illegible]

Length of body: [illegible]

Diameter of body: [illegible]

Thickness of wall: [illegible]

Material of body: [illegible]

Type of suspension: [illegible]

Suspension lug: [illegible]

Color and markings: [illegible]

Length of tail: [illegible]

Width of tail: [illegible]

Material of tail: [illegible]

Type: [illegible]

Weight of filling: [illegible]

Total weight: [illegible]

Charge/weight ratio: [illegible]

Construction of body. [illegible]

Construction of tail. [illegible]

[illegible]

[illegible]

Overall [illegible]
Length of body [illegible]
Shape [illegible]
Thickness of wall [illegible]
Material of wall [illegible]
Type of suspension [illegible]

[illegible]

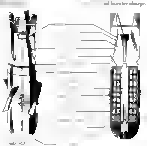


Fig. [illegible]

Figure 14—Type 49 No. 2 AN. 2 bomb.

[illegible]

[illegible] Bomb Model

Overall length [illegible]

Diameter of body [illegible]

Type of explosive [illegible]

[illegible]

Weight of [illegible]

[illegible]

Construction of body. [illegible]

[illegible]

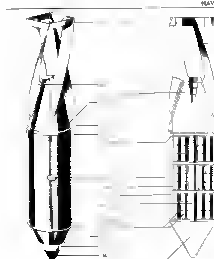


Figure 50—Fins 2-in. 4 lb. 3-bank bomb I.

Construction of tail. The tail cone is cut (in longitudinally. Four angled iron ribs (ribbed) to the cone and brazed by a single seam on the cone seam. The angle of cone has an angle of 30 degrees clockwise seamed in flight to the barrel, thereby arming the elaborate cone.

Operation. This release lever the lever the spring-loaded mechanism is latched in the tail cone charge which becomes the cone is operative when The bomb-arm and mechanism are [illegible] ing the boundary action. The [illegible] in spoked cone I is screwed to the [illegible]

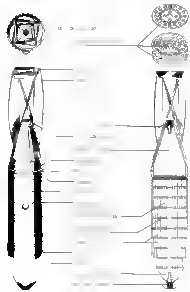


Fig. Type 97/1 25 kg. Bomb Mark

[illegible]

[illegible]

Type of suspension: [illegible]

[illegible]

Construction of [illegible]

[illegible]

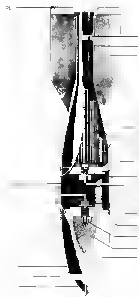


Fig 54 — Type 99 75 mm Gun Model

[illegible]

Type 3 No. 60 MG 5 and No. 50 MG 5 Bombs

[illegible]

[illegible]

Type 1 No. [illegible] Mk 9 Model [illegible] and Type 3 No. 6 Mk 9 Bombs

[illegible]

General remarks. [illegible]

[illegible]

Type 99 No. [illegible] Mk 6 Bomb Model 1

[illegible]

[illegible]

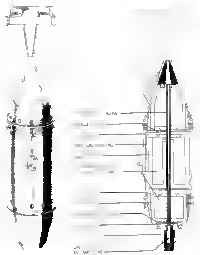


Figure [illegible]—Type 99 [illegible] Bomb [illegible]

[illegible]

Operation. [illegible]

Type 98 No. 7 (6) Bomb Model 1

Fuze: With [illegible]
Overall length: [illegible] inches
Length of body: [illegible] inches
Diameter of body: [illegible] inches
Thickness of wall: [illegible]
Total weight: [illegible]
Type [illegible]

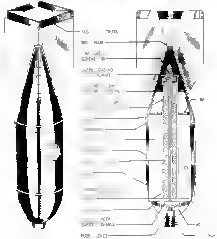


Figure 80—Type 98 No. [illegible] Model 1.

Dimensions [illegible] inches [illegible]

Material [illegible] steel.

Type [illegible] [illegible] by [illegible]

[illegible]

Construction of body. [illegible]

Construction of tail. [illegible]

Operation. [illegible]

Type [illegible] Land Model [illegible]

[illegible]

Fuze: [illegible]

Overall length: [illegible]

Length of body: [illegible]

Diameter of body: [illegible]

Thickness of [illegible]

Material of walls: Steel.

Type of weapon: [illegible]

[illegible]

Number of pellets: [illegible]

Composition of pellets: [illegible]

Weight of [illegible]

Composition: [illegible]

Weight: [illegible]

Total weight of [illegible]

Construction of body. [illegible]

Figure 24. Axial No. [illegible] 0 Shock-Absorber 3 Modification

A longitudinally [illegible] and radial [illegible] the axle also [illegible] end [illegible] by [illegible] in hold [illegible] by [illegible] single row [illegible] screws.

Characteristics of the [illegible] are steel, welded to the self [illegible]. They are [illegible] by weight [illegible] of [illegible] type [illegible] series.

Brake: Type [illegible] Model [illegible] brush [illegible] the [illegible] rigidity [illegible] the [illegible] cylindrical [illegible] of [illegible] cylindrical [illegible] of [illegible] shaped [illegible] yellow [illegible] aluminum.

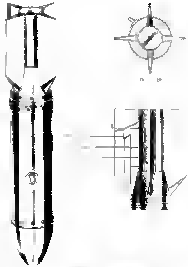


Figure [illegible]

Type [illegible] No. [illegible] [illegible] Bomb Model [illegible]

[illegible]

[illegible]

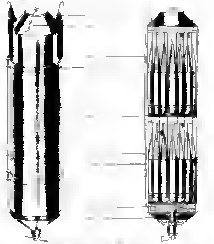
Construction of body. [illegible]

Construction of tail. [illegible]

[illegible]

[illegible]

Description. [illegible]



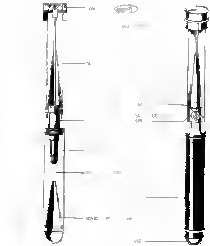


Figure 47— [illegible] Bomb

[illegible] Mills Chemical Bomb

[illegible]

Over [illegible] inch [illegible] inches

Length of body [illegible] inches

Diameter [illegible] inches

Thickness of wall [illegible]

Material [illegible]

Type of [illegible]

[illegible]

Specimen [illegible]

Cylinder [illegible] Body [illegible]

The tail assembly is [illegible]

Length [illegible] 9 inches [illegible]

Width of fins [illegible] 8 inches

Dimensions of [illegible] Length [illegible]

diameter [illegible] inches [illegible]

[illegible]

Construction in body. [illegible]

Construction in tail. [illegible]

[illegible]

Operation. [illegible]

[illegible] Bomb Model 2

Fuze: [illegible]
Overall length: [illegible] inches.
Length of body: [illegible] inches.
Diameter of body: [illegible] inches.
Thickness of wall: [illegible] inch.
Material of wall: [illegible]
Type of suspension: [illegible]
Suspension lug: [illegible]
Color and markings: [illegible]

Description. [illegible]

[illegible]

Operation. [illegible]

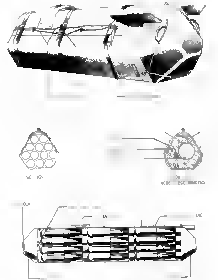
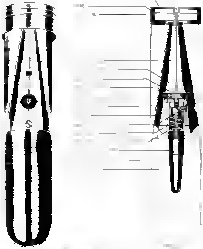


Figure 66—Type 3.25a, U.S.N.—Bank Pocket 2.

ing the release wire from the rewinding lever bumper. The rewinding bumper spring, 1017, the minimum

overcoming and thus allowing the 35 [illegible] to fall under gravity.



Antipersonnel B

[illegible]

Charge [illegible]

Cannon [illegible] **of** [illegible]

Bore of [illegible]
Rifled [illegible]
Weight [illegible]
Length [illegible]

Construction of the [illegible]

[illegible] **Operation** [illegible]

[illegible]

[illegible]

Type No. 4 Mk III Bomb Mortar

Frame [illegible] Ext
Overall length [illegible] inches
Length of barrel [illegible] inches
Diameter at base [illegible] inches
Minimum of wall [illegible] inches
Material of wall Steel
Type of generator Hydraulic

[illegible]

Material of [illegible]
Type [illegible]
Weight of [illegible] lb per [illegible]
Total weight of [illegible] lb
Weight [illegible] lb

Construction of bomb. [illegible]

[illegible]

Type 3 No. 6 Mk 27 Bomb (Rocket) Model 1

Overall length: [illegible]
Diameter of body: [illegible]
Weight of bomb: [illegible]
Weight of propellant: [illegible]
Total weight: [illegible]
No. ... [illegible]
Color and markings: [illegible]

General description. [illegible]

[illegible]

Figure 16— 105 Z-Bar, 8-Mile 37' Boom (Bow-Left Hinge)

[illegible] N.A.I. [illegible]

[illegible] MK 21 Bomb (Rocket) Model 1

Type: [illegible]

Overall length: [illegible]

Diameter of body: [illegible]

Weight: [illegible]

Weight [illegible]

Weight [illegible]

Color: [illegible]

General description. [illegible]

[illegible]

[illegible] No. 71 MK 19 Bomb

[illegible]

[illegible]

Figure [illegible] Bomb.

[illegible]

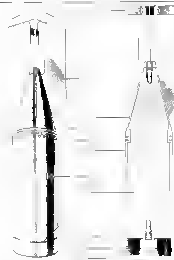


Figure [illegible] type 3 No. 25 [illegible]

type 3 No. 25 MB — Book Mole

Frame: Type [illegible] [illegible] Grade [illegible]
Over-all length: [illegible] inches.
Length of body: [illegible] inches.
Diameter of body: [illegible] inches.
Circumference of [illegible]: [illegible] in.
Material of [illegible]: Steel

[illegible]
[illegible]
[illegible]
Length of [illegible]: [illegible]
Width of [illegible]: [illegible]
Width of [illegible]: [illegible]

Dimensions of tail. Width [illegible]. [illegible] inches; [illegible] thickness, [illegible] inch.
Material of tail: Steel.
Type of filling: [illegible].
Weight of filling: [illegible] pounds.
[illegible] weight of bomb: [illegible] pounds.
Charge/weight ratio: [illegible] percent.

Construction of body. The bomb consists of [illegible] barrel and a [illegible] assembly.

The nose of the bomb is [illegible]. A [illegible] plate [illegible] of the barrel [illegible]. The plate is [illegible] and [illegible] is welded to the body. A [illegible] of the barrel is welded to the [illegible] of the barrel. The [illegible] is [illegible] to [illegible] of the forward end.

The barrel [illegible].
The tail [illegible] held by [illegible] plug [illegible] the [illegible] barrel [illegible] by [illegible] a standard [illegible] of the [illegible].

Construction of tail. [illegible] is [illegible] welded in the [illegible]. The [illegible] by [illegible].

Operation: The [illegible] has been [illegible] by a [illegible] which is [illegible] by a [illegible] from the [illegible] the [illegible] was [illegible].

Type 2 No. 50 Mk. [illegible] Bomb Model [illegible]

Fuzes: Type [illegible].
Over-all length: [illegible] inches.
Length of body: [illegible] inches.
Diameter of body: [illegible] inches.
Thickness of wall: [illegible] inch.
Material of walls: Steel.
Type of suspension: [illegible].
[illegible] body [illegible] the [illegible].
[illegible] and [illegible] of [illegible].
Length of tail: [illegible] inches.
Width of tail: [illegible] inches.

Width of tail: [illegible] inches.
Dimensions of [illegible] inches, [illegible] inches.
Material of tail: Steel.
Type of filling: [illegible].
Weight of filling: [illegible] pounds.
Total weight: [illegible] pounds.
Charge/weight ratio: [illegible] percent.

Construction of tail. The [illegible] of [illegible].

[illegible]

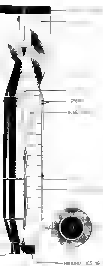


Fig. 27 Bomb Model

[illegible]

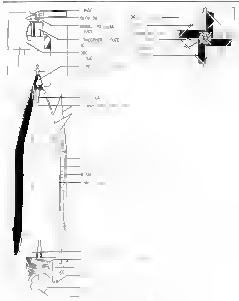


Fig. 73 — Type 99 Mk. 23 Mod. Bomb

[illegible]

[illegible] Boats Modification 1 and Modification 2

[illegible]

Type of aircraft: [illegible]

[illegible]

Color and markings: [illegible]

Length of sail: [illegible]

Width of sail: [illegible]

Width of [illegible]

Dimensions of [illegible]

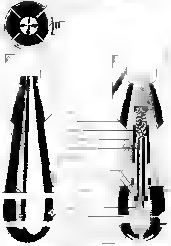
Material of sails: [illegible]

Type of [illegible]

Weight: [illegible]

Total weight of [illegible]

[illegible]



[illegible] Bore Model [illegible] Mechanism

Construction of body

[illegible]

Construction of tail

[illegible]

Figure 72—Mk. Practice Bomb Model

Mk. 3 Practice Bomb Model

Power 3-6 OD
Overall length 108 inches.
Overall weight 100 pounds.
Diameter of body 8 inches.
Thickness of wall 1 inch.
Material of wall Steel

Type of suspension Horizontal
Center line lug normal to longitudinal axis.
Color and markings The body painted of the suspension lugs is black. All of the fins is white. The red lines 60° on either side of the suspension lugs indicate length of the shell at mean. New nose or fin is red to black.

Length of tail [illegible] inches.

Width of tail [illegible] inches.

[illegible]

Material of tail: Steel.

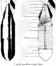
[illegible]

Total weight of bomb [illegible]

Construction of body. [illegible]

[illegible]

Construction of tail. [illegible]



[illegible]

[illegible] No. 3 Pocket Knife

Pattern [illegible]
Overall length: [illegible] inches.
Length of body: [illegible] inches.
Diameter of body: [illegible] inches.
Thickness of [illegible]
Material of [illegible]
Type of [illegible]
Markings: [illegible] Naval Navy [illegible]
[illegible] The forward half of the [illegible] and has a [illegible] around the [illegible]. The [illegible] half [illegible] the [illegible]
Length of [illegible] inches.
Width of [illegible] inches.
Width of [illegible] inches.

Diameter of [illegible] length [illegible] inches.
[illegible]
Material: [illegible]
Type of Blade: The [illegible] and [illegible] [illegible]
Total weight of [illegible]
Construction of [illegible]: The [illegible]

[illegible] A [illegible]

Construction of [illegible]: [illegible]

Remarks: The [illegible]

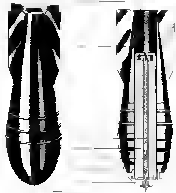


Fig. 4.—Type 88 detonating fuze.

Type 88 Detonating Fuze

[illegible] Pull igniter

[illegible] Length [illegible]

[illegible] Diameter [illegible]

[illegible] Weight [illegible]

[illegible] Type and [illegible] Brass cage, alloy steel cylinder. Hand thrown [illegible] grenade. 40mm [illegible] and mortarage. Grey over B [illegible] of [illegible] [illegible]

[illegible] and [illegible] [illegible]

[illegible] Brass, steel, [illegible]

Description of [illegible] [illegible]

Material of [illegible] Steel [illegible]

Type of Mine: Mine[illegible]

Weight of Filling: [illegible] pound

Total weight of fuze: [illegible] B

Description: [illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

Operation: The [illegible] [illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

Landing Flare

[illegible]

Type of suspension: Launched by hand

[illegible]

Color: [illegible]

Length of [illegible]

Width of [illegible]

Diameter of [illegible]

Material of [illegible]

Type of filling: Illuminant

Weight of filling: [illegible]

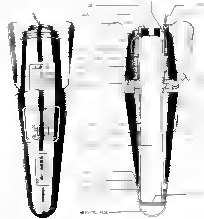


Figure [illegible]—Landing Flare

Total weight of bomb: [illegible] pounds (approximate).
Charge/weight ratio: [illegible] percent.

Construction of body. [illegible]

Construction of tail. [illegible]

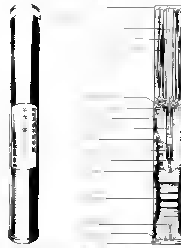
[illegible]

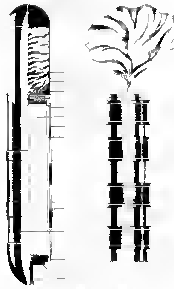
Operation. [illegible]

[illegible] Practice Fire Model 2 Modification

Fuze: Tail [illegible]
Overall length: [illegible] inches.
Diameter: [illegible]
Material: [illegible]
Type of suspension: [illegible]
Color and markings: Body [illegible] Two [illegible]
Type of filling: [illegible]
Weight of filling: [illegible] pounds.
Composition of [illegible]:
[illegible]
Wax: [illegible] percent

[illegible]





[illegible] Paradoxe Flute [illegible] and Model Modification

[illegible]

Length to First Hole: [illegible]

[illegible]

Weight of [illegible]

Construction: [illegible]

[illegible]

[illegible] Paradoxe Flute [illegible] Modification

[illegible]

Construction of body: [illegible]

[illegible]

Figure 76.—Type 0 Parachute Flare Model 2 and Model 3 Modification 1.

[illegible] The case is [illegible] the [illegible]

The flashbody is contained in a [illegible] which is secured by [illegible] [illegible]. The [illegible] and [illegible] by [illegible] by screws in the cylinder. [illegible] [illegible] [illegible] [illegible]

Length of [illegible] [illegible] inches.
Length of [illegible] [illegible] inches.
Diameter of [illegible] [illegible] inches.

[illegible] Model 3: [illegible] [illegible] [illegible]

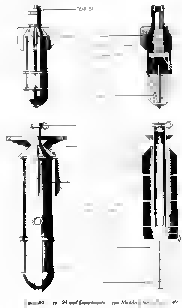
Model 3 Modification 1: [illegible]

Operation: [illegible]

Figure [illegible]—Experimental Model [illegible] Parachute Flares.

[illegible] Model [illegible] Parachute Flare

[illegible]



[illegible]

Length of Stomach [illegible]
Length of Stomach [illegible]
Stomach [illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible]

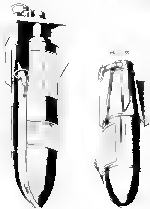


Figure 81—Type 94 Model 5 and Type 4 Model Float Lights.

Type 94 Model 5 and Type 4 Model Float Lights.

[illegible]

Construction of body. [illegible]

[illegible]

Construction of tail. Type [illegible]

Operation. [illegible]

Remarks. [illegible]

3-4. Snake Float

Fuze: Pull igniter.
Overall length: 19 inches.
Diameter of body: [illegible]
Color and markings: [illegible]
Total weight: [illegible]
Propellant: [illegible]

Description. [illegible]

[illegible]

Operation. [illegible]

Figure [illegible]—Snake Float

Remarks. [illegible]

[illegible] Snake Float

Fuze: [illegible]
Overall length: [illegible]
Length of body: [illegible]
Diameter of body: [illegible]
[illegible]
Total weight: [illegible]
[illegible]

[illegible]

Description. [illegible]

Operation. [illegible]

[illegible] Smoke Bomb

[illegible]

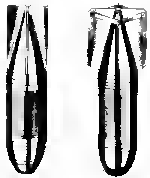


Figure 56—Type B Model Type B Model B, and Continuous Type Bar Markers

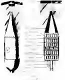
Type of construction	Type B Model Developed by Lord Kelvin	Continuous type Developed by Lord Kelvin
Supporting or Guide and maintaining the bar in the center	Glass tube (the tube which supports the bar and holds it in the center)	Wooden supporter (supports the bar and holds it in the center of tube)
Length of the tube in the center	Type B Model 1 inch shorter than the bar	Continuous type 1 inch shorter than the bar
Diameter of the tube	Type B Model 1/2 inch	Continuous type 1/2 inch
Material of the tube	Glass	Continuous type Wooden
Method of filling the tube	Lead shot or pellets	Continuous type Pellets
Weight of filling	Type B Model 1 pound	Continuous type 1 pound
Total weight of bar, including weight of tube	Type B Model 3.5 pounds	Continuous type 3.5 pounds

Construction of body Type B Model consists of a cylindrical body in the form of the letter "B" (see sketch). The top and bottom of the body are closed by means of right circular wood heads (see sketch).

Continuous type A collaboration was required to assure body fitting and adhesive so that the body fit the bar of the continuous type. The body is made of two pieces of wood, the top adhesive joint is not continuous but are glued in the bar cross. Shaming the bar holes are the bar cannot be a wood cylinder 3/4 inch in diameter. Element in this article is most easily fit the cross-section of the bar of the body. Adjusted between the cross hole and the wood cylinder to the bar is diameter cage wooden pin 40 inches long.

Operation. [illegible] the plug at the [illegible] [illegible] the body [illegible] [illegible] [illegible] [illegible] body [illegible] [illegible] [illegible] **Casting.** [illegible] [illegible] [illegible] [illegible] [illegible]

Remarks. Type [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]



[illegible] Bomb

Fuze: [illegible]

Overall length: [illegible]

Length of body: [illegible]

Diameter of body: [illegible]

Thickness of wall: [illegible]

Material of wall: Steel

Type of suspension: [illegible]

Suspension lug: [illegible]

Color and markings: [illegible]

Length of tail: [illegible]

Width of tail: [illegible]

Width of tail fins: [illegible]

Dimensions of tail struts: [illegible]

Material of tail: Steel

Type of filling: [illegible]

[illegible]

Weight of filling: [illegible]

Total weight: [illegible]

Charge/weight ratio: [illegible]

Construction of Body. [illegible]

Construction of Tail. [illegible]

[illegible]

Fuze: None.

Overall length: [illegible]

Length of body: [illegible]

Diameter of body: [illegible]

Thickness of wall: [illegible]

Material of wall: [illegible]

Type of suspension: [illegible]

Suspension lug: [illegible]

Color and markings: [illegible]

Length of tail: [illegible]

Width of tail: [illegible]

Width of tail fins: [illegible]

Dimensions of tail struts: [illegible]

Material of tail: [illegible]

Type of filling: [illegible]

Weight of filling: [illegible]

Total weight: [illegible]

Charge/weight ratio: [illegible]

Construction of Body. [illegible]

Construction of Tail. [illegible]

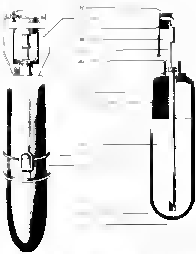


Figure [illegible]

[illegible]

Operation. [illegible]

9-kg. Winden Bomb

Purpose: Fuze [illegible]
Overall length: [illegible] inches
Length of body: [illegible] inches
Diameter of body: [illegible] inches
Thickness of [illegible]
Material of body: [illegible]
Type: [illegible]

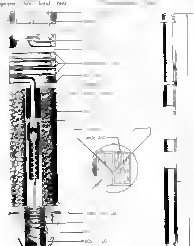


Figure 111—9-kg. Winden Bomb

Dimensions of tail: [illegible] inches [illegible]

Material of tail: [illegible]

Type of filling: [illegible] paper strips, [illegible]

Weight of filling: Paper strips, [illegible]

[illegible] weight: [illegible] pounds [illegible] ounces.

Description: [illegible]

[illegible]

"Baka" Piloted Rocket Bomb

BAKA [illegible]

Overall length: [illegible] feet [illegible] inches.

Wingspread: [illegible] feet [illegible] inches.

Description: [illegible]

WARHEAD Data

[illegible]

Type of filling: Trinitroanisol.

Weight of filling: [illegible] pounds.

Total weight of warhead: [illegible] pounds.

Description: [illegible]

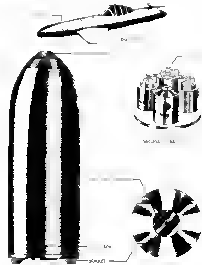


Figure 66.—"Sabot" Pointed Service Bomb.

closed by a hood plate. These all-face packets are arranged around a central threaded hole in a slightly raised portion of the hood plate. The nose tube accommodates a long pelle which the pilot operates by means of a lever and forms the mechanismatic

Figure ... Type 4 ... Launching Rocket ("Baka" Motor)

Type 4 Mk. Launching Rocket ("Baka" Motor)

[illegible]

Figure 98.—Special 6D—Rocket Motor Model 3

Special 6D—Rocket Motor Model 3

Overall length: [illegible] inches

Maximum diameter: [illegible]

Description: This unit is designed as a [illegible] rapid [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] ordinary [illegible]. This motor has never been [illegible] but is reported to be only slightly different from the [illegible] model.

Weight of complete motor: [illegible] pounds ([illegible] kilograms).

Weight of propellant: [illegible] pounds ([illegible] kilograms).

Length of propellant stick: [illegible] inches.

Depth of propellant stick: [illegible] inches ([illegible] millimeters).

Weight of ignition charge: [illegible] grams.

Propellant: The propellant charge consists of [illegible] sticks of [illegible] [illegible] designation. The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

The [illegible] [illegible] are arranged [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Igniter: The [illegible] consists of [illegible] [illegible] [illegible] [illegible] charge of black powder. The igniter is fastened [illegible] the forward end of the [illegible] and is ignited [illegible] [illegible].

Stabilizer: [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Remarks: The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Type 3 and Model 1 Rock Launcher Grenade

	Type	Model 1
[illegible]	[illegible] inches	[illegible] inches
[illegible]	[illegible]	[illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

	Type	Model 1
Weight of projectile	[illegible] pounds	[illegible] pounds
Weight of propellant	[illegible]	[illegible]
Length of projectile	[illegible] inches	[illegible] inches
Diameter of projectile	[illegible] inches	[illegible] inches
Weight [illegible] charge	[illegible]	[illegible]

Propellant: The propellant charge [illegible] [illegible] [illegible] [illegible] [illegible].

Igniter: The propellant [illegible] [illegible] [illegible] [illegible].

[illegible]: [illegible] [illegible] [illegible] [illegible].

Remarks: [illegible] [illegible] [illegible] [illegible].

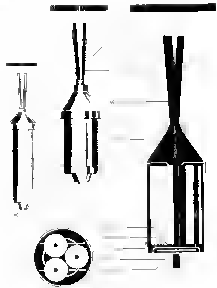


Figure 91 [illegible] and Model 1 Bomb-Lowering Device

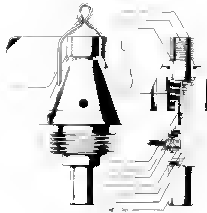


Fig. 7 Fuze Type 3

Chapter 1

JAPANESE BOMB FUZES

Introduction

[illegible]

ARMY FUZES

[illegible]

NAVY FUZES

[illegible]

Chapter 1—Section 1

ARMY BOMB FUZES

Type 92 Instantaneous—Short-Delay Fuze A-3 (a)

[illegible]

[illegible]

Ground-water [illegible] in [illegible]
Effect of [illegible] on [illegible] spring [illegible]
Pacific and [illegible] Spring H [illegible] [illegible] [illegible]

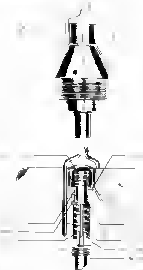
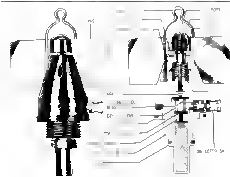


FIGURE 19—A 120 Bomb Fuze.

[illegible] for strike or [illegible] [illegible] for arming and for firing [illegible] [illegible] Detail, in the parts [illegible]

Remarks This general [illegible] [illegible] is good [illegible] [illegible] good.



[illegible]

Type 99 Instantaneous (Short D Lay) Fuze A-3(c)

[illegible]

Markings

[illegible]

Description. [illegible]

[illegible]

Remarks. [illegible]

[illegible]

Type: [illegible]

[illegible]

Type: [illegible]

Type: [illegible]

Type: [illegible]

Color: Natural brown.

Overall length: [illegible]

Overall width: [illegible]

[illegible]

[illegible]

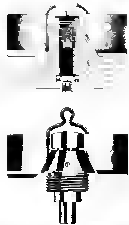
[illegible]

[illegible]

Body shape: None.

[illegible]

Description. [illegible]



[illegible]

Remarks. [illegible]

Type 93 [illegible] Fuze for Large Bombs A-6 (a)

[illegible]

[illegible]

Color: [illegible]

Overall length: [illegible]

Overall width: [illegible]

Material of construction: [illegible]

[illegible]

[illegible]

Description. [illegible]

Operation. [illegible]

Figure [illegible]

[illegible]

[illegible] Type 1 Bomb Fuze (a)

Bomb [illegible] Type [illegible]

Color: [illegible]

Overall length: [illegible]

Overall width: [illegible]

Material of construction: [illegible]

[illegible]

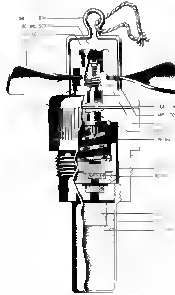


Figure [illegible] Anti-lift Device Fuze

ARMY BOMB FUZE

Fuze No. 1 on 3 Bomb A-6 (b)

Description: 1 — [illegible] Type: [illegible]
Stamping:

[illegible] 2 [illegible]

(Tokyo Arm. Arm. & Technical 1939)

Color: [illegible]
Operation: [illegible]
Material: [illegible]
Manufacturer: [illegible]
Position of marking of fuze: [illegible]

[illegible]

Description: [illegible]

Operation: [illegible]

Remarks: [illegible]

[illegible]

★ [illegible] 七 十 [illegible]

[illegible]

Description: [illegible]

[illegible]

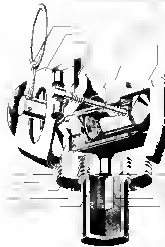


FIGURE 9[illegible]—[illegible] Lock [illegible].

Operation. The [illegible] shown from the analog sys[illegible] [illegible] shown from the plane. The [illegible] analog system is sending signals to channel [illegible] of the key lock. [illegible] channel [illegible] C[illegible] connect with a valid system, the [illegible] primer or channel [illegible] [illegible] through the [illegible] [illegible] through the [illegible] [illegible] [illegible] to [illegible] of the [illegible].

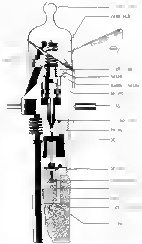


Figure 106—Ball Fuze

Type 4 Two-Second Delay Fuze A-B (4)

Length: 1 inch. Weight: 190 kg. (Loaded in shell fuze).

Color: Brass, except for black vents.

Overall length: 30 inches (base reserve not guided).

Overall width: 2½ inches.

Material of construction: Metal except for screening vents, lightening holes and firing pin.

Time delay: 2 seconds (reserve bearing).

Functioning: Fuze is armed by setting (2 turns) time scale of hand and tightened by [illegible] fire the reserve delay.

Characteristics of interest: Primer 0·1 gm. gasless, and harmless. Safety incorporated in gasless

Description. [illegible] a [illegible] and [illegible] The [illegible] The [illegible] The [illegible] of the [illegible]

The [illegible]

[illegible]

The [illegible] of the [illegible]

Operation. The [illegible] The [illegible] from the [illegible]

Type of Bee-Sound Device For Fire Lamps Bombs A-B (b)

Bombs in which used:
 [illegible]
 [illegible]
Color: [illegible]
Overall length: [illegible]
Overall weight: [illegible]
Materials: [illegible]

[illegible]

Description. The [illegible]

[illegible]

The [illegible]

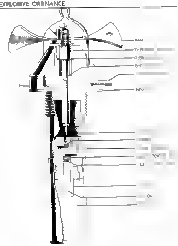
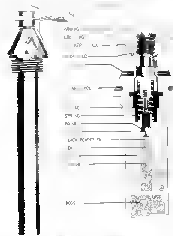


Figure 151—1-kg. Bomb A-1

Operation The bomb body is dropped from the plane by means of a release gear. The bomb then falls with its tail fins. The impact fuze is set to target the explosion detonates and the firing pin is driven into the primer. The flash ignites the shell, from which it flies into the target.



[illegible] 67—B. Oil Bath Gun.

[illegible] 12-Year Tell Tale B- [illegible] Mathers.

[illegible] on mud

[illegible] 50-and 80-kg

[illegible] and 40-kg (upper arch

[illegible] 1a. 10-kg

[illegible] 4a. reduction

[illegible] Tr. 21. December 1911

[illegible] Mr. M. Baker.

[illegible] 1911 when then horner

[illegible] about.

東 ☆ 12 丸 + 8B

[illegible]

Description. [illegible]

[illegible]

Type [illegible] Second Delay Fuze [illegible]

[illegible]

[illegible]

Description. [illegible]

Operation. [illegible]

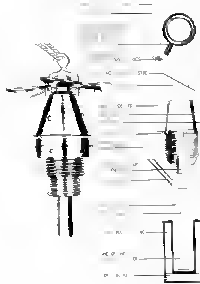


Figure 1123—Bomb Fuze

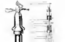


Figure [illegible] Fu[illegible]

Type 93 Tail Fuze for Large Bombs [illegible]

Bombs used with:

Type [illegible] 500 and 250-kg

Type [illegible] 500 and 250-kg

Markings:

[illegible]

[illegible]

Thread: [illegible]

Description. The upper portion of the body [illegible]

Operation. [illegible]

Figure [illegible]

[illegible] Tail [illegible]

Body: [illegible] Type: [illegible] delay [illegible]

Color: [illegible]

[illegible]

Description. The [illegible] body [illegible] [illegible]

Operation. The arming vane assembly unscrews and falls away after the bomb is released from the airplane. [illegible]

Requirements for Standard Delay Tail Fuze [illegible]

Dropping altitude: [illegible]

Color: Black except for [illegible]

Overall length: [illegible]

Overall [illegible]

[illegible]

Firing delay: [illegible] approximately 15 seconds.

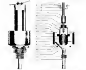


Figure [illegible] Pull Beach Fuze

Description. The fuze consists of [illegible]

[illegible]

[illegible] slightly beyond the shoulder of the [illegible] housing.

[illegible]

Operation. Arming vanes [illegible]

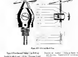


Figure [illegible]

Type 4 [illegible] (on [illegible])

Bombs in which used: [illegible] "[illegible] Model" bomb.

Color: [illegible]

Overall length: [illegible]

Overall width: [illegible]

Material of [illegible]

[illegible]

Threads: [illegible] threads per inch, [illegible]

Construction. [illegible]

[illegible]

Operation. [illegible]

Fuze, Long-Delay Base C-3 (a)

[illegible]

東 ☆ 4 し 十 昭

[illegible]

[illegible]

Description. [illegible]

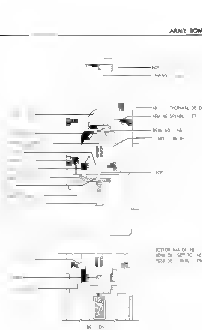


Figure 118—C-3 (a) Bomb Fuze.

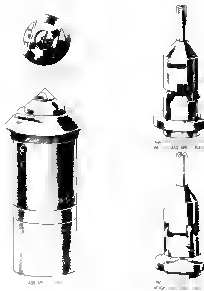


Figure 369.—C-3 (60 Bomb)

[illegible]

Operation. [illegible]

[illegible]

Type A	[illegible]
Type B	[illegible]
Type C	[illegible]
Type D	[illegible]

[illegible]

[illegible] Fuze B-1 (a) and B-1 (b)

Bodies: [illegible]

[illegible]

Color: Lamp black.

Overall length: [illegible]

[illegible]

Description. [illegible]

[illegible]

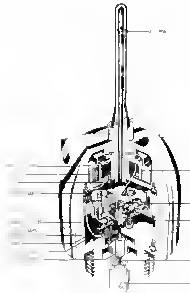


Figure 8—Fuze and Fuze Well Bomb

[illegible]

Operation. [illegible] the [illegible] the shutter [illegible] of the [illegible] the [illegible] the spring [illegible] from the [illegible]. The [illegible]

[illegible]

Remarks. The only [illegible] base [illegible] body [illegible]

Type 4 Model Base D-1 (A) Fuze

Combination Base D-1 (A)

Ranges in [illegible] used.

Used in	Used in
Type [illegible]	Type [illegible]
[illegible]	[illegible]
Type [illegible]	[illegible]
Type [illegible]	
Type [illegible]	

Markings:

[illegible]

Color: Brass.

[illegible]

Material of construction: Brass [illegible] and [illegible] springs, [illegible] and [illegible].

Position and method of firing: [illegible]

Composition of explosive train: Black powder [illegible] and high explosive [illegible].

[illegible]

[illegible]

Description. The fuze body is a [illegible] piece. The [illegible] body by [illegible] screws. [illegible] The [illegible] body [illegible] the [illegible] body [illegible] and the [illegible] between the [illegible]

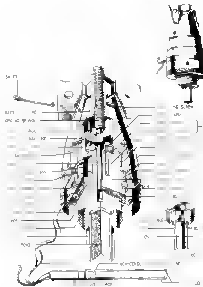


Figure 17.—B-3 (a) and B-3 (b) Bomb Fuze

[illegible]

Operation. [illegible]

[illegible]

Type [illegible]

[illegible]

阪 [illegible] 八十 [illegible]

[illegible]

[illegible]

Description. [illegible]

[illegible]

Operation. [illegible]

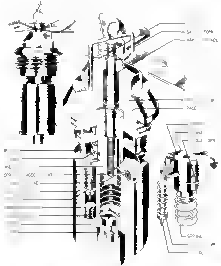


Figure [illegible]. [illegible] fuze.

[illegible] locked vanes are [illegible] beyond the fuze body [illegible] against the spring and [illegible]. The operation of the [illegible] of the arming [illegible] fuze body by [illegible]

[illegible]

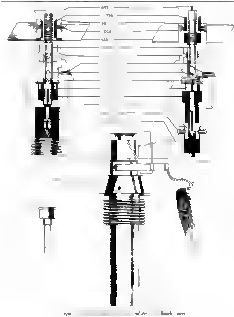
[illegible] Control Radio F[illegible]

[illegible]

[illegible]

[illegible]

Figure 72—Remote Control Radio Fuze.



Chapter 8. Section 9

NAVY BOMB FUZES

A–(1), A–(2), and A–(3) Nose Fuzes

[illegible]
(1)—[illegible]
(2)—Type [illegible]
(3)—Type [illegible]
[illegible]
[illegible]
(1)—Type [illegible] Fuze Model [illegible]
Type [illegible]
Type [illegible] Fuze Model

	A–(1)	A–(2)	A–(3)
	Hooded brass	Hooded brass	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Brass	Brass	Brass [illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Standard [illegible]	Primer and detonator	Standard [illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

Description. The [illegible] Through [illegible]

Operation. [illegible]

Remarks. [illegible]

[illegible]

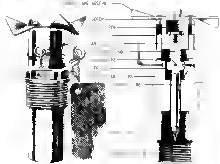


Figure 5—A-3 (a) Bomb Fuze.

Figure 5—Adjustable Bomb Fuze Model 4 A-3 (a)

Bomb fuze adjustable [illegible]

Type [illegible] [illegible]

[illegible] A [illegible] ordinary Model 4

Type [illegible] [illegible] ordinary Model

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] place [illegible]

Fuze Body: [illegible]

Body: [illegible]

Threads: [illegible]

Description. The [illegible] consists of [illegible] [illegible]

Operation. [illegible]

Remarks. [illegible]

Designation: Type [illegible]

Nose Fuze Mod. [illegible]

Data: [illegible]

Overall length: [illegible]

Overall [illegible]

Material of construction: [illegible]

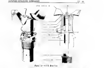


Figure [illegible] Fuze

Position and method of arming: Inside threaded [illegible] into nose [illegible] fits in slot of body [illegible] holding down nut.

Components: [illegible]

[illegible]

Description: The fuze consists of three parts, the body, the [illegible] and the arming assembly.

[illegible]

[illegible] spindle is fixed toward, showing the lower [illegible] the firing pin [illegible] position.

Remarks The lower [illegible] the surface spindle [illegible] 25 lbs-in [illegible] 25 lbs-in [illegible] upper [illegible] spring [illegible] by screw head [illegible] the upper [illegible] body [illegible] screw [illegible] head.

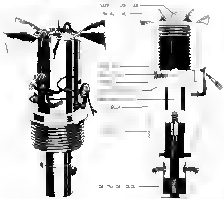


Figure 8 Fuze A-3 (c) (Inert) Fuze

Fuze 8 Nose Inertia A-3 (c)

Inertia Material steel [illegible] type brass [illegible] steel bar.

Overall length 6 inches Overhang after [illegible] Overall width 2½ inches max-mum, 2¼ inches. Material of construction Steel with brass inertia spindle and [illegible]

[illegible]

Composition. [illegible]

[illegible]

Fuzes. [illegible]

Type 91 Mk 2 Nose Fuze Model A-3 (J)

Revision which came into service Nov. 30 Year 2591 (1931)

Interior Model

Outer Model

[illegible]

Weight. [illegible]

Description. [illegible]

Composition. [illegible]

Remarks. [illegible]

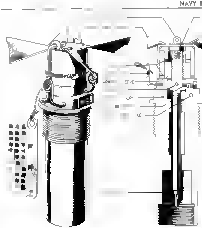


Fig. 170—B-2 (U) Bomb Fuze

[illegible]

[illegible]

Operation. On release of bomb the firing pin [illegible] through the guide. Travelling [illegible] in the delayed action and detonator [illegible] impinging an initial primer in the bursting [illegible]

[illegible]

Operation. [illegible]

[illegible]

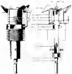


Figure [illegible]—A-3 [illegible] Fuze

[illegible]ype 2 Mod[illegible]

[illegible]

Description: The four [illegible] of the four [illegible]

[illegible]

[illegible]ype 4 Mo. 39 [illegible]

[illegible]

Description: The [illegible]

[illegible]

Fig. 20 — 10 Kilo

[illegible]

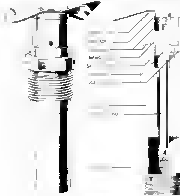


Figure [illegible]

A-3 (d) Mine Fuse

Burning [illegible] and Bullet bomb.
Outer Material steel
Overall length [illegible] in.
Overall width [illegible] inches
Materials of construction: [illegible] and recess for the [illegible] driving [illegible] to be operable and bearing surfaces

Fuse [illegible] and vertical [illegible] and [illegible] clockwise pins, [illegible] bearing drives and requirements of [illegible] fuse [illegible]
Fuse [illegible] to be fuzed [illegible] of
Delay time [illegible] seconds of
Threads 20 turns per inch [illegible] diameter

Description. [illegible]

[illegible]

[illegible]

Operation. [illegible]

Remarks. [illegible]

[illegible]

[illegible]

Description. [illegible]

Operation. [illegible]

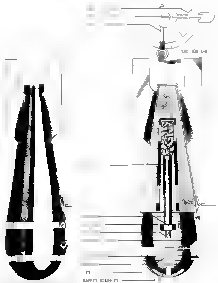


Figure 38—A-3 (U) Stock Form.

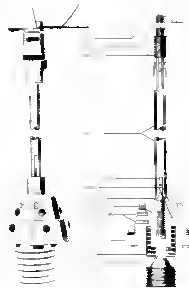


Figure 33—8-0 (a) Bomb Fuze

Type 99 No. [illegible] Ordinary Bomb Fuze [illegible]

[illegible]

Overall length: [illegible]

Overall width: [illegible] inches

[illegible]

Description. [illegible]

Operation. [illegible]

Remarks. [illegible]

Type 99 No. [illegible] Bomb Fuze [illegible]

[illegible]

[illegible]

Description. [illegible]

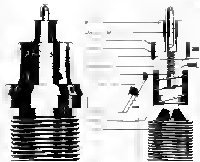
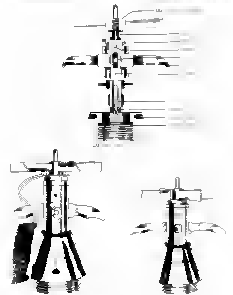


Fig. 74. [illegible]

[illegible]

Fig. 5 Type 0 Fuze Model 5 and Model 7
(Type 0 Fuze and Type 0 Fuze)

[illegible]



[illegible] 7-1: (a) and B-3 (b) Brake Valves

Color [illegible]

Overall length [illegible]

Weight [illegible]

Material of [illegible]

[illegible]

Description. [illegible]

Operation. [illegible]

Remarks. [illegible]

[illegible]

[illegible]

Overall length [illegible]

Material of construction [illegible]

[illegible]

Description. [illegible]

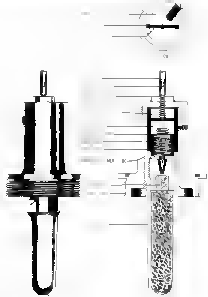


Figure 56—B-2 (Ta) Bomb-Fuze

[illegible]

Operation. [illegible]

Remarks. [illegible]

[illegible]

Body: [illegible]
Color: [illegible]
Overall length: [illegible]
Overall width: [illegible]
Filler: [illegible]

[illegible]

Description. [illegible]

Operation. [illegible]

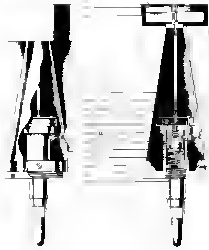


Figure 185—B-2 (c) Arming Vanes.

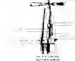


Figure [illegible]

Type 97 [illegible]

[illegible]

Markings:

[illegible]

Color: Brass [illegible]

Overall length: [illegible] inches

[illegible]

Description: [illegible]

Operation. [illegible]

[illegible]

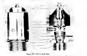


Figure 99.—[illegible] Fuse.

[illegible] Tail Fuse

[illegible]

Overall length: [illegible] inches.

Overall width: [illegible] inches.

[illegible]

Description. [illegible]

base body contains a locking spring which serves to secure the base firmly in its pocket.

The other assembly consists of a striker, striker guide, striker [illegible] spring. The striker assembly is a rod which has been [illegible] to a blade and lower shaft. The rod is [illegible] in a guided [illegible] The striker has [illegible] which is intended to be [illegible] to contact the back of the [illegible] primer. There is [illegible] spring in the side of the striker [illegible] Each is fitted [illegible] and serve to hold the striker [illegible] A spring holds the striker very firmly in place after the [illegible] and [illegible] retained.

Operation. When the pin of the hand [illegible] is lowered [illegible] the striker assembly, the striking rod is [illegible] to allow the spring-loaded [illegible] to [illegible] forward [illegible] the primer. The striker [illegible] is [illegible] by [illegible] the primer by the spring. On [illegible], remove the striker in the [illegible] extension from the [illegible] [illegible] the spring [illegible] and [illegible] the primer.

If the primer is not fired, the striker assembly is released by the [illegible] and the rod drops to the closing stop. This action forces the rod to drive against the spring, thereby bringing the primer

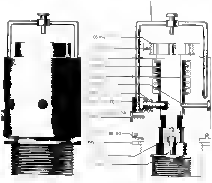


Figure 70—B-10 Lab Bomb Fuze

[illegible]

[illegible]

[illegible]

Description. [illegible]

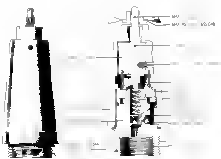
[illegible]

Operation. [illegible]

Type 99 Special Bomb Tail Fuze [illegible]

[illegible]

Description. [illegible]



[illegible]

compression [illegible] [illegible]

[illegible] When the plug [illegible]

Remarks. [illegible]

Cautions. [illegible]

[illegible] 22 Special Bomb Clock Fuse C-9 (a)

[illegible] metal

[illegible] pe No. [illegible] head

Type [illegible] head

[illegible] to [illegible] color

[illegible] ve [illegible] ch

[illegible] d length [illegible] inches.

[illegible] all [illegible] inches.

W [illegible] ensure the [illegible] ange from each

[illegible] ng plate.

Function and method of firing. [illegible] from TI

is removed into the nose of the bomb

by firing ball primers mounted

[illegible] ter [illegible] ter [illegible] ness. [illegible] ts [illegible] ation

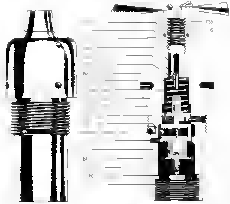


FIGURE 12—C-9 (a) Bomb Fuse.

[illegible]

Operation. When the bomb is released, the [illegible]

Remarks. [illegible]

[illegible]

[illegible] Aerial Bomb [illegible]

[illegible]

[illegible]

Tail	Body	Colour of tail	Colour of [illegible]
Overall length [illegible]	[illegible]	[illegible]	[illegible]
Overall width [illegible]	[illegible]	[illegible]	[illegible]

Material: [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

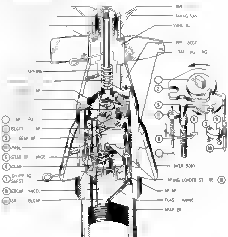


Figure 122—D-1 (A), D-1 (B), and D-2 (A) Bomb Fuzes.

	D-1 (A)	D-1 (B)	D-2 (A)
Map index	8-20 seconds.	6-20 seconds.	8-20 seconds.
Thimble	90 inches diameter. 14 threads per inch.	90 inches diameter. 14 threads per inch.	90 inches diameter. 14 threads per inch.

Description.—These fuzes have a cylindrical shape, and contain steel operating parts. The fuzes are in all three forms identical, except that each is made for attach to a different auxiliary pyrotechnic and a different pyrotechnic for the booster. All of the fuzes are equipped with a 90-inch diameter pyrotechnic booster and a 14-thread per inch thimble.

The part of the fuze equipment that is different in each fuze is the booster. The part of the fuze equipment

[illegible]

[illegible]

[illegible]

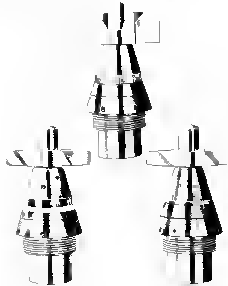
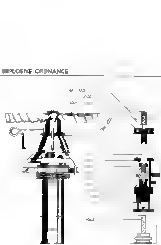


Figure 36—B-5 (a), B-6 (b), and B-9 (c) Bomb Fuzes.



[illegible] the fuze [illegible] [illegible] [illegible]

Fuze: [illegible]

[illegible]

Description: [illegible]

Remarks: [illegible]

Remarks: [illegible]

Type 3 Cluster Fixing Device

Description: The Type 3 [illegible] Fixing Device [illegible]

Dimensions:

[illegible]

Operation: [illegible]

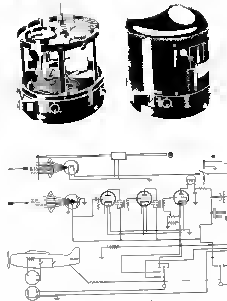


Figure 37 — Type 2 Double Firing Device.

Chapter 8—Section 2

GAGES AND MAGAZINES

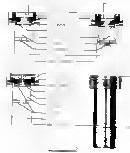


Figure 130—Army Gages

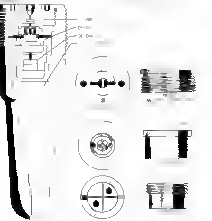
Introduction to Army Gages

[illegible]

Introduction to Navy Gauges

[illegible]

[illegible]



Type 97 Lead Bomb Gauge "B" and Type 99 Ordinary Bomb Gauge "C"

Type 97 Lead Bomb Gauge

Type 99 ordinary bomb gauge

Bomb Gauge

Bomb Gauge

Bomb Gauge

Bomb Gauge

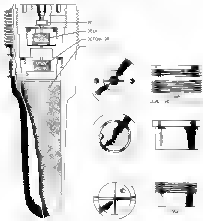


Fig. 97 and Bomb Gauge "B" and Type 99 Ordinary Bomb Gauge "C"

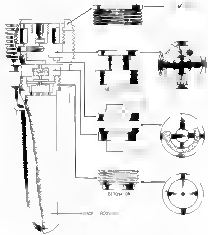


Figure 100—Type 88 Ordinary Bomb Fuzes

Type 88 Ordinary Bomb Fuzes

Remarks and operation Type 88 also or bomb fuzes

Delay Series ... ary from instants to 3 seconds

Used in conjunction with ... and bodies bomb. It is ... recent have been provided ... and ... 88 ... incorporated ... other ... Bomb ... point ... ary in ... ple ... point ... ment ... like ... ment ... sold however

Type 98 Lewis Brush Gun—Modification E

square segmental Type 98 is bent into
Modification
Delay Instrument
Gas Tip not relined
Dimensions Length 47.5 ins. Depth 7.5 ins.
Weight 17 lbs. Rate of firing 550 shots per min.
Gas vent opening [illegible] to 7 ins.
Mag. pressure [illegible] lbs
Point of Sensitive [illegible]

Fig. 1 Type 98 Lewis Brush Gun Modification E.

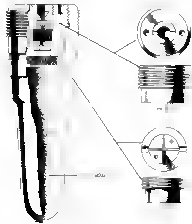


Figure 346—Type 96 Land Mines Cutaway.

Type 96 Land Mines Cutaway

Name designation: Type-96 land mine pulse
Policy: Mine mission.
Color: Tan mine material
Dimensions: Length, 8 inches; Depth, inches
Explosive units: Primer composition one 1.5 grams; Detonator plug, 55 grams; Main charge, 1 pound
Load units: Detonator one 1 oz; Main charge, Picric acid, 1 pound.

Type 4 Gates for Slipping Beads

Agency designation: Type [illegible] gage for slipping beads.

Entry: [illegible]

Case: Type [illegible]

Dimensions: Length [illegible] inches; Depth [illegible] inches.

Enclosure [illegible]

Figure 168—Type 4 Gates for Slipping Beads

Figure 46—Type 3 AA 3 Gaine A

Type 46-3 Gaine A

In order designation "Type 46 — which also

Type 3 is materials.

Color Red not colored.

Dimensions Length 3 cm. inside diameter.

Explosive charge Tetryl composition charge

Use Used in Type 3 AA 3 Gaine A

Operation Inner tube engaged with outer tube. Pin in one position prevents any relative movement. Pin is taken up by spring and detonation can occur. It is taken up Tetryl and booster

Figure 147—Type B M6-B Bomb Gravure

type B M6-B Bomb Gravure

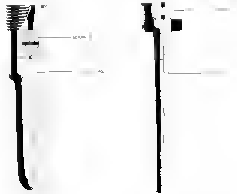
Japanese designation: Type 0 M6-B bomb gallery (Shiki 6) gravure
Color: [illegible] colored
Dimensions: [illegible] inches overall, diameter [illegible] inches
Explosive fuze: Primer mechanism [illegible] plug. Black powder charge over black powder in center or outside of plug. Lead azide detonator over black powder in lower plug. Picric acid exploder [illegible] cup. Picric acid tetryle

type B Bomb Gravure

Japanese designation: Type 0 M6-B bomb gallery (Shiki 6) gravure
Color: [illegible] colored
Dimensions: [illegible] inches overall, diameter [illegible] inches
Explosive fuze: Primer mechanism [illegible] plug. Black powder charge over black powder in center or outside of plug. Lead azide detonator over black powder in lower plug. Picric acid exploder [illegible] cup. Picric acid tetryle

Description: The electric firing [illegible] is the [illegible] electric [illegible] plastic [illegible] [illegible] from the [illegible] to [illegible] female plug which [illegible] in [illegible] weights in the [illegible] [illegible]

Figure 68—type B Bomb Gravure



Type 3 Small Model Bank Gutter Model 1

Figure 750—Practice Bom Gutter.

Type 3 Small Model Bank Gutter Model 1

Japanese designation. Type 3 small model Bank gutter Model 1

Date. [illegible]

Color. Tip not painted

Dimensions. Large [illegible] Depth, [illegible] Exterior [illegible] Material. Aluminum [illegible] [illegible] [illegible] Fuze. [illegible]

Practice Bomb Gutter

Japanese designation. Practice bomb gutter

Date. [illegible]

Color. Tip not painted

Dimensions. Overall length, [illegible] inches

Material. [illegible] Weight, [illegible] pounds

Fuze. [illegible]

Navy Magazines

[illegible] magazines are [illegible] to [illegible] Navy [illegible]. Magazines [illegible] [illegible].

[illegible] are two types of magazines. [illegible] [illegible] magazine [illegible] [illegible] [illegible] magazine [illegible] [illegible] [illegible] [illegible] [illegible].

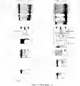


Figure [illegible]—Navy Magazines.

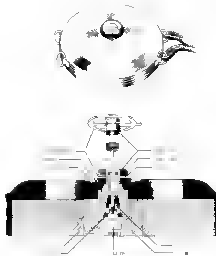


Fig. [illegible] *Type 93 short, side and front Percussion Contact Mines.*

Chapter 5

LAND MINES, GRENADES, FIRING DEVICES, AND SABOTAGE DEVICES

Introduction

Although the [illegible] of [illegible] . At [illegible] forces [illegible] in [illegible] had, [illegible] the important [illegible] in the Pacific war. [illegible] because of the Japanese [illegible] antitank artillery and [illegible] lack of armored forces [illegible] mines [illegible]

[illegible]

[illegible]

The [illegible] of Japanese [illegible]

[illegible]

[illegible]

[illegible]

Section I

LAND MINES

Type 93 Antitank and Antipersonnel Land Mine

Diameter: [illegible] inches.
Over-all height: [illegible] inches.
Weight: [illegible]
Weight of explosive: [illegible] pound.

Type [illegible] [illegible]

[illegible]

[illegible]

Anti-Vehicle "Tsuchan" Land Mine

[illegible]

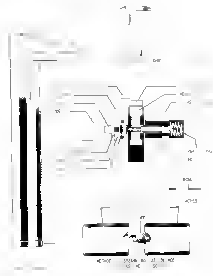


Figure 123—Anti-Vehicle Pressure Land Mine

Description [illegible]

Fuzes [illegible]

Employment [illegible]

Cautions [illegible]

Type 00 Arrow-Projection Land Mine

[illegible]

Description [illegible]

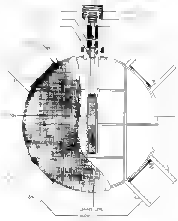


Figure 166—Type 3F 40mm Projectile Load Mark.

Employment. Load on ammunition or mule-drawn mount or against armored fortifications.

Operation. The base is carried mechanically and the projectile is loaded by hand. The fuze is set by the setter, set in action the base cap plug, discharge, and be ready under placed on or mount on armor plate at the range of one fuze. The base is forced forward against the cone seat, stop, or gaging plate with the striking bolts. The cannon of firing is opening forces in releasing bolts into this power and also forces the striker down to the detonator cap.

Remarks. This ammunition of 40mm ammunition. Shorter fuzes and the base cap lower edges of the projectile-bolts. One cannon will produce weight of performance plate in barrel. The 40mm are free mostly on the cartridge and stops in work will provided a fuze wood plate.

Figure [illegible]—Cone Mine.

[illegible]

Weight of [illegible]

Explosive filling [illegible]

Weight of charge [illegible]

Description. The [illegible]

[illegible]

[illegible]

These metal liquid-containing [illegible] are welded to the case of the charge container at 180° from the [illegible]

Three grooves in the rim [illegible] clamps to [illegible]

Employment. Used as an [illegible] weapon capable of [illegible]

Operation. [illegible]

Tactics Cap Mine

Overall length: [illegible]

Total length of [illegible]

Diameter of [illegible]

Explosive filling: [illegible] TNT [illegible]

Type of filling: [illegible]

Description. [illegible]

[illegible] Cap Mine

[illegible]

Operation. [illegible]

Figure [illegible]—Bomb [illegible] and Antipersonnel Land Mine.

Dutch Antitank and Antipersonnel Land Mine

Overall length: [illegible]
Height of body: [illegible]
Diameter of body: [illegible]
Diameter of [illegible]
Wall thickness: [illegible]
Weight: [illegible]
Fuze: [illegible]
Type of [illegible] TNT
Color and markings: [illegible]

Description. The body is of pressed steel [illegible]

Employment. [illegible]

Operation. [illegible]

Type 3 (a) [illegible] and Antipersonnel Land Mine

[illegible]

Explosive filling: [illegible]

Weight of explosive: [illegible]

Total weight of mine: [illegible]

Color: [illegible]

Description. [illegible]

Figure 3 (b) Australoid and Australo-Negroid Lateral Views.

Wid	[illegible]	[illegible]
Height	[illegible]	[illegible]
Height	[illegible]	[illegible]
Length	[illegible]	[illegible]
Cha	[illegible]	[illegible]
Ex	[illegible]	[illegible]
	[illegible]	[illegible]

[illegible] 3(a)—[illegible] (b) Australoid and Australo-Negroid Lateral Views.

[illegible]

Weight of explosive: [illegible]

Total weight: [illegible]

Description: [illegible]

[illegible]

Operation: [illegible]

Fig. [illegible]—Bakelite Antipersonnel Land Mine

Bakelite Antipersonnel Land Mine

Diameter: [illegible] inches.
Height: [illegible] inches.
Total weight: [illegible] pounds (approximate).
Thickness: [illegible]
Color: Black.
Explosive filling: TNT.
Weight of explosive: [illegible] pounds (approximate).

Description: [illegible]

[illegible]

[illegible]—5-kg. Hemispherical Antitank Land Mine

5-kg Hemispherical A/Tank Land Mine

The 5-kg. hemispherical A/TK mine is [illegible] to [illegible] the [illegible] of A/TK [illegible] and [illegible] vehicles which the Japanese [illegible] during the war. [illegible] [illegible] to be placed [illegible] [illegible] vehicle either by hand or by means of [illegible].

The mine is hemispherical in shape. There is [illegible] [illegible] [illegible] [illegible] [illegible].

The mine is [illegible] by the same fuze as is [illegible] [illegible] A/TK mine.

[illegible] of this mine were found [illegible] [illegible], very few of them having been produced.

[illegible] Torpedo and pole

Dimensions: Not [illegible].

Total weight of torpedo: [illegible] pounds.

Weight of filling: [illegible] pounds.

Type of filling: [illegible] picric, cyclonite [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

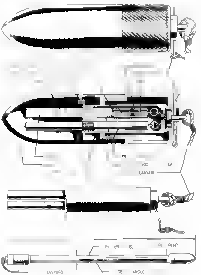


Figure [illegible]—Bangalore Torpedo and Igniter

Description. [illegible]

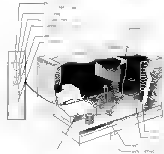
Operation

[illegible]

Inspection [illegible] the operator to [illegible] handpieces [illegible] mental [illegible] run the tool [illegible] battery [illegible] mailed by mail.

Pressure and [illegible] Lever Motor

Over-all length [illegible] inches.
Over-all width [illegible] inches.
Over-all height [illegible] inches.
Weight of [illegible] pounds.
Type of [illegible] Three blade [illegible]
Note: Illustration of spacer [illegible] blades.



[illegible] 3—Pressure and [illegible] Motor.

Description. [illegible]

[illegible]

[illegible]

Employment. Used as an anti-tank or anti-personnel [illegible]

Operation. [illegible]

[illegible] Land Mine

Overall length: [illegible]
Overall width: [illegible]
Overall height: [illegible]
Weight of charge: [illegible]
Type of explosive: [illegible] TNT [illegible]

Description. [illegible]

[illegible] Land Mine

Employment. The [illegible] [illegible] below [illegible] [illegible] [illegible]

Figure 160—Sectorized Arrangement for Inspection Lower Shelves and Assembly Pits

Air-Bomb Drive (Upper Hall) Figure 66

[illegible]

Assembly Line [illegible]

Description [illegible]

Assembly Line (Lower Hall) Figure 66

[illegible]

Description [illegible]

Type 18 Airborne Mine

Diameter: 18 inches.
Height: 36 inches.
Total weight: 76 lbs.
Weight of explosive: 18 lbs.
Weight of casing (including frame, water container and vent): [illegible]
Weight of filling: [illegible] pounds.
Type of filling: Type 98 explosive (TNT).
Number of vents: [illegible] (side and bottom air lodgment chamber).

Fig. 1. Type 18 Airborne Mine

Description. [illegible]

[illegible]

Employment. [illegible]

[illegible]

Remarks. [illegible]

[illegible] Wire

Kind of [illegible]

Weight of [illegible]

Type of [illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Description. [illegible]

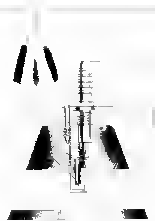


Figure 1948—Type JG Auxiliary Valve

Description [illegible] Air [illegible] pressure [illegible] and has been used [illegible] Blue [illegible] A.W. units for some time.

Operation The valve is [illegible] the stem has been machined [illegible] with [illegible] spring-loaded screwed-in plug. When positioned properly, the [illegible] is supported, leaving [illegible] to seat [illegible] and hinder the operation of the valve.

The [illegible] has no electrical parts to produce by heating.

Remarks The designation for this unit is Pneudi type units Mark 2.

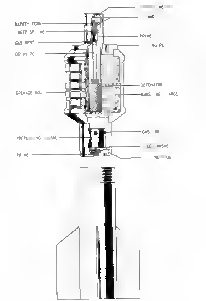


Figure 788—Type 0 Hand, Mortar, or Rifle Grenade

HAND, RIFLE, AND MORTAR GRENADES

Introduction

The [illegible] several types developed both before and during the war. [illegible] of the grenades. The typical [illegible] used by ground forces, was developed by the Army [illegible] and also used by the Navy [illegible].

The hand and rifle grenades [illegible] [illegible] [illegible]

[illegible]

[illegible]

Type 91 Hand, Mortar, or Rifle Grenade

Overall length: 3¾ inches.
Maximum diameter: 2 inches.
Color: Body black [illegible] red and brass.
Total weight: 1.1 pounds.
Filling: Powdered TNT.
Weight of filling: [illegible] grams.
Delay: [illegible]

Description. The [illegible] body [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Operation. [illegible]

[illegible]

[illegible] Hand Grenade

[illegible]

Description. [illegible]

Operation. [illegible]

Remarks. [illegible]

Figure [illegible] Hand Grenade.

Figure [illegible] 99 Hand Grenade

[illegible]

Type 99 Hand Grenade

Overall length: [illegible] inches.

Diameter [illegible] inches.

[illegible]

Total weight: [illegible] pound.

Filling: [illegible]

Body: [illegible]

Description. [illegible]

Operation. [illegible]

Remarks. [illegible]

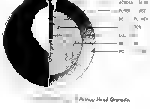
Type 4 Pottery Hand Grenade

Body: [illegible]
Diameter: [illegible]
[illegible]
Thickness of [illegible]
[illegible]
Filling: [illegible]
Weight of filling: [illegible]
Total weight of grenade: [illegible]
Delay: [illegible]

Description. [illegible]

Operation. [illegible]

Remarks. [illegible]



Pottery Hand Grenade

Figure 73—Type 10 Hand Grenade.

Type 10 Hand Grenade

Overall length: [illegible] inches.
Maximum diameter: [illegible] inches.
Color: Black.
Total weight: [illegible] pounds.
Filling: [illegible] TNT.
Weight of filling: [illegible] grams.
Delay: [illegible] seconds.

Description. The [illegible] body [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

Operation. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Type 98 Stick Grenade

[illegible]

Description. [illegible]

Operation. [illegible]

Figure 79.—Type 98 Stick Grenade.

Type 3 Conical Antitank Hand Grenade

	Large Grenade	Small Grenade
Length of grenade	[illegible]	[illegible]
Length of tail	[illegible]	[illegible]
Diameter at base	[illegible]	[illegible]
Length of base	[illegible]	[illegible]
Length of neck	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Total weight	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Description. The grenade [illegible]

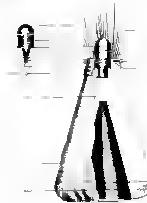


Figure 73—Type Crushed Ferrule, Hose Connection

Operation: Before the grenade is thrown the [illegible] [illegible]

[illegible]

[illegible] Hand Grenade

Overall length [illegible]
Maximum diameter [illegible]
Color: Black

Total weight [illegible]
Filling: TNT

Weight of filling [illegible]
Delay [illegible]

Description. The [illegible] grenade [illegible] consists of [illegible] body, [illegible] cap [illegible] [illegible] assembly [illegible] firing [illegible] [illegible] [illegible] striker [illegible] cap and [illegible] percussion cap.

The [illegible] [illegible] [illegible] grenade body [illegible] [illegible] [illegible] and [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. The [illegible] of the body [illegible] [illegible] [illegible] [illegible] [illegible] ground. This [illegible] is [illegible] by the [illegible] plug which [illegible] as shown. The [illegible] is [illegible] to the [illegible] end of the [illegible] plug.

[illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] plug and the [illegible] grenade [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] ground. The [illegible] is [illegible] [illegible] to [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

The [illegible] the [illegible] grenade is made [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. The tube is [illegible] by [illegible] [illegible] [illegible] [illegible] the [illegible].

Operation. [illegible] [illegible] [illegible] the [illegible] is [illegible] against the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. The grenade [illegible] [illegible] by hand or by [illegible] of the [illegible] [illegible] [illegible] [illegible]. The delay is from [illegible] seconds.

[illegible] Incendiary Hand & Mortar Grenade

Overall length: 3.5 inches
Maximum diameter: 2 inches
Body material: Brass
Weight: [illegible] pound
Filling: White phosphorus
Delay: [illegible] seconds

Description. This grenade may be thrown by hand or projected with the [illegible] grenade [illegible] [illegible] [illegible]. The [illegible] [illegible] is [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. The [illegible] [illegible] of the [illegible] [illegible] [illegible] [illegible] [illegible] hand grenades.

The [illegible] [illegible] [illegible] [illegible] [illegible] inches long, [illegible] [illegible] diameter and has [illegible].

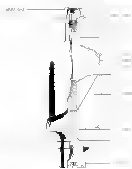
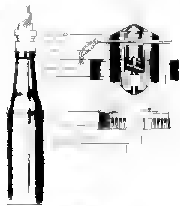


Figure [illegible] Type Antiaircraft [illegible] Mortar Grenade

[illegible] propellant [illegible] [illegible] the [illegible] propelling charge [illegible]

Incendiary Shell [illegible]

[illegible]



[illegible] Model Codes

[illegible] Type [illegible] Diameter [illegible] Length [illegible] Weight [illegible] Explosive [illegible] Fuze [illegible] Remarks

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Plate Bomb-Spotting Model [illegible] Condition

Length, [illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Description. The grenade [illegible] consists of a [illegible] pressed steel body [illegible] with the [illegible] and with a [illegible] to [illegible] the [illegible] and [illegible] that [illegible] the [illegible] wire [illegible] and [illegible] to hold [illegible] in place [illegible] of the [illegible]

The grenade is equipped [illegible] and [illegible] outboard is [illegible]. The safety clip [illegible] pressed in the cylinder by an oval brass [illegible] outboard and serrated.

Fig. 270—Hand grenade, M1 (Mixture Combined)

Grenades. [illegible]

[illegible] weight M. C. H. Grenades and Fumigation Smoke Grenade

[illegible] weight HEN Grenades

[illegible]

[illegible]

French Smoke Grenade

[illegible]

American Hollow-Charge Rifle Grenade

Overall length [illegible]
Diameter [illegible]
Color: Black and [illegible]
Fuze [illegible]
Filling: [illegible]
Weight of [illegible]

Description: This grenade is a hollow-charge [illegible] for use with Garand [illegible]. Performance [illegible] is equivalent to that of the rifle.

The body is cylindrical with a conical point [illegible]. It is made in two pieces threaded together and fitted to the rifle [illegible] by means of a [illegible] hollow-charge effect. The forward end of the [illegible] contains the [illegible] the [illegible]. The blind gun, with a blank [illegible] and a dummy [illegible] are the same and [illegible] replacements and

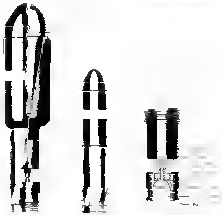


Figure 42—Hollow Charge Fuze Threads

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible] Hollow Charge Rifle Grenade

[illegible]

Description. [illegible]

Operation. [illegible]

Model 3 Modification Rifle Grenade

[illegible]

Description. This grenade [illegible]

Operation. [illegible]

Remarks. A translation of the labels attached [illegible] the following information: [illegible]

[illegible]

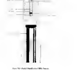


Figure [illegible]

Figure 104—Smoke Rifle Grenade.

Smoke Rifle Grenade

Overall length: 10 inches
Maximum diameter: Body 2 inches; fins 2¾ inches
Cap: 38 gr
Total weight: 32 oz
Filling: Hexachloroethane, 20.27 percent; zinc oxide, 37.8 percent; zinc chloride, 3.3 percent; aluminum, 38.6 percent

[illegible]

Description. [illegible]

[illegible]

Remarks. [illegible]

Small Incendiary Rifle Grenade

[illegible]

Description. [illegible]

[illegible]

FIGURE VIII—Small Rifle-Stick Rifle Grenade.

The rod-rod threads, joining the barrel and [illegible] and then placed on rod. The [illegible] are reinforced by wire coiling and soldering and run over into the barrel [illegible]

[illegible] are used as generals in the [illegible] in the [illegible] [illegible]

Operation: After the grenade has been placed over the shaft, adjustment of [illegible] is limited with [illegible] [illegible] [illegible] the rifle. The [illegible] [illegible] [illegible] the grenade. When the rifle is fired the gases from the [illegible] propel the grenade [illegible] of [illegible] force of [illegible] in the grenade [illegible] [illegible] [illegible] [illegible] determines as being the [illegible] [illegible]

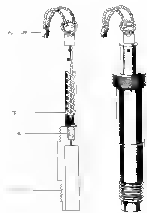


Figure 166—Mk. Assembled Pull Igniter

Chapter 1—Section 3

FIRING DEVICES AND SABOTAGE DEVICES

Introduction

[illegible]

Mechanical Pull Igniter

Overall length: [illegible]
Maximum diameter: [illegible]
Color: [illegible]
Weight: [illegible]

Description: [illegible]

Employment: [illegible]

Operation: [illegible]

To render safe: [illegible]

Figure 187—Friction Pull Igniters.

Friction Pull Igniters

[illegible]

Construction. [illegible]

[illegible]

[illegible]

Waterproof Safety-Fuse Igniter

[illegible]

Description. [illegible]

Figure 188—Waterproof Safety-Fuse Igniter.

[illegible]

Employment. This ignitor is used to [illegible]

[illegible]

Trigger-Type Safety-Pin Ignitor

Description. The [illegible]

[illegible]

Operation. [illegible]

[illegible]

Disarming. [illegible]

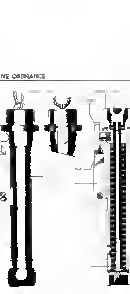


Fig 164— Hippo gun Safety fuse pattern.

To render safe. Turn the safety ring to the "Safe" position so as to attach the primer and free from the separate fuse in the base of the gun cap.

Bank Range Firing Practice

Over-all length 18 inches
Diameter 3 inches
Weight 2 pounds 6 ounces.
Color Black.
Material of construction Cast iron.

Properties. Its tools used out of wooden cases for transportation and stowage in the hold of a ship.

[illegible]

[illegible] pulling out of the upper part of [illegible] through the [illegible]. The [illegible] [illegible] with the [illegible] [illegible]. The cartridge case is [illegible] of the [illegible] device.

Appearance. [illegible]

Operation. [illegible]

To render safe. [illegible]

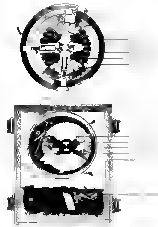


Figure 181—Dropping Clock

[illegible] Demolition Unit

[illegible]

[illegible] Long Delay Demolition Unit

[illegible]

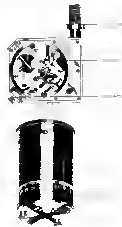


Figure 177—Bomb Fuze Dove

Seven-and-Nine-Half Day Demolition Clock

Popularity of European design, this clock is smaller and more handy than Type 97. Its action is similar to that of the Type 97 clock, but it can be used by means of wires or cutting against the water edge of the hull. The dial is graduated around four minutes to midnight. The hand does not move longer than five minutes on the circumference of the dial, allowing the setting-inside, under. The clock housing is hermetic. The hatch is held closed in the shape as also demolition-fixed.

Type 98 Seven-Day Demolition Clock

This is a seven-day-time bomb. It ships up to 7 days. The hatch of the clock housing is hermetic. The clock is fixed in the hatch and can be set for the hour on the dial through the key in the hatch. All the time of the clock is in minutes for easy time. It is used if the clock is to fire in a certain specifically. A protected ring is provided with one of the dials for the purpose of setting the time.

Figure 193—Time Fuze Basic M6

Time Fuze Basic M6

Length (without pins)	16 inches
Maximum diameter	[illegible]
Length of guide	3½ inches
Diameter of guide	[illegible]
Diameter of base	[illegible]
Material of construction	Wood

Description. Two varieties of this fuze are known to exist, differing only in the color of their plastic, same in all the elements of their living parts except wire. The model here shown consists of a plastic body and metal parts. The plastic body is [illegible] the [illegible] part [illegible] body is [illegible] of the [illegible] in diameter. The body of the fuze [illegible] lowly [illegible] of the [illegible] through a [illegible] opening. The [illegible] is [illegible] a small [illegible] block is [illegible] retaining wire is secured [illegible] the wooden block in position. [illegible] of the [illegible] is [illegible] to prevent the [illegible] of the fuze in a small [illegible] hole. A compressed fuze

[illegible] operate. [illegible] pressure [illegible] firing pin [illegible] parallel [illegible] mechanism [illegible] the firing pin [illegible]. The point of [illegible] threaded [illegible].

A small hook [illegible] attached [illegible].

Employment. [illegible]

Operation. [illegible] downward upon the detonator.

Firing time [illegible] following results:

[illegible]	30 minutes.
[illegible]	[illegible]
[illegible]	30 minutes.
[illegible]	[illegible] minutes.

[illegible]

To render safe. [illegible]

Chemical Delay Firing Device

Overall length: [illegible] inches.
Maximum diameter: [illegible] inches.
Color: Black.
Material of construction: Bakelite.
Length of time [illegible]

Description. [illegible]

Figure [illegible]—Chemical Delay Firing Device.

The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Identification. [illegible]

Operation. [illegible]

Precautions. [illegible]

Explosive Toothpaste Tube

Length: 4.25 inches.
Width: 1 inches approximately.
[illegible]
[illegible]
Weight of explosive: [illegible]

Description. [illegible]

Operation. [illegible]

Figure [illegible]—Explosive Toothpaste Tube.

Figure 206—Explosive Coal

Explosive Coal

Length Inches (approximately)
Width Inches (approximately)
Color Black
Explosive R.D.X.

Description This device consists of two sections each made of briquette slabs are square-cut only. Length 1/16 inch weight 1/2 ounce. Each section is made of two slabs. Each section is filled with explosive and connected to igniter. The igniter is copper tube with detonating cap on one end. Lead blade parallel charge. The charge and placed next to the detonator cap.

Close measure one weight one of explosive on the scale. Place briquette in the mold and manually compress to layer when necessary. Remove mold.

Operation When opened by fire, the heat normally ignites the blast powder which in turn sets off the detonator and main charge.

Figure 99—Illustrative Fused Cases.

Explosive Fused Cases

[illegible]

Description. These [illegible]

[illegible]

Operation. [illegible]

Metal [illegible] Cylinders

Large [illegible] inches
[illegible] inches
[illegible] Diameter

Figure [illegible] Cylinders.

Description. These cylinders are [illegible] of light [illegible] metal. They are filled with [illegible] and have an igniter [illegible] at the center of the top surface.

[illegible] cylinders have been [illegible] [illegible] [illegible] of castings and igniters [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Operation. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] light [illegible]

Figure [illegible]—Incendiary Brick

Incendiary Brick

Over All Dimensions: [illegible]
[illegible]
[illegible] [illegible] [illegible]

Description. The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. There is no [illegible] [illegible] [illegible] [illegible].

Operation. The incendiary [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] When the [illegible] [illegible] through the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] against the brick.

Incendiary Soap

Length: [illegible] inches.
Width: 2 1/2 inches.
Thickness: [illegible] inches.
Weight: [illegible] ounces.
Incendiary mix: [illegible] percent [illegible] percent [illegible] percent magnesium, [illegible] percent aluminum, [illegible] percent [illegible] percent [illegible] percent [illegible] percent [illegible].

Figure [illegible]—Incendiary Soap.

Description. The Incendiary Soap is [illegible] designed to resemble [illegible]. The [illegible] and [illegible] the color. The [illegible] but is easily not [illegible] by [illegible].

If [illegible] but [illegible] it [illegible] of [illegible].

Chapter 8

ARMY AMMUNITION

NITROGLYCERIN

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

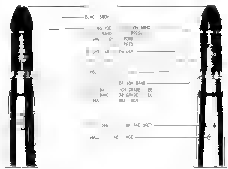
[illegible]

[illegible]

[illegible]

[illegible]

ARMY—OLD COLOR SYSTEM



Common Explosive Types

Japanese ammunition is generally identified by the type number of the projectile, the type of the projectile, and the type number of the fuze. The projectile and fuze numbers appear only when there is danger of confusion with similar projectiles or fuzes.

Chemical (Gas or Liquid) Filled Projectile

Special-Purpose Projectiles

Projectiles [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Weight Variation Marking

The variation of [illegible] projectiles from standard weight is important [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] projectile.

[illegible] weight [illegible] over overweight

[illegible] [illegible] over overweight

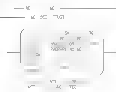
[illegible] weight [illegible] [illegible]

[illegible] [illegible] underweight

[illegible] [illegible] [illegible] underweight

ARMY—NEW COLOR SYSTEM

The new system is based on the Munsell hue, to designate [illegible] classification. In Munsell color [illegible] hue, value and chroma are [illegible] Color hues designate more specific [illegible] Tints are of permanent analine dyes [illegible] Chromatic [illegible] symbols are the same in both systems.



Common Explosives Types

Yellow charge [illegible] is of long steel base [illegible] type is size 50 M. High [illegible] Yellow band [illegible] preservative [illegible]

Three-Inch Gun or Howitzer Projectiles

Spherical Purpose Projectiles

Projectiles designed [illegible] special purposes as [illegible] are identified by the color of the ogive [illegible] to color identification [illegible]

Projectile	Use	Ogive Marking	Symbol
A [illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Red	[illegible]
[illegible]	[illegible]	Black	[illegible]
Model B		Black	[illegible]

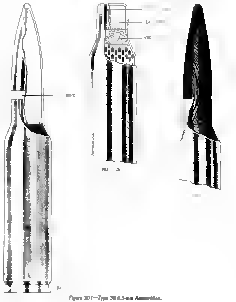


Figure 207—Type 28 0.5-in Ammunition.

Chapter [illegible]—Section [illegible]

ARMY PROJECTILES

Type [illegible] [illegible]-mm Ammunition

[illegible]

Fig 101—Type 99 Grenade 77 mm 6mm

Type 99 (Rimless) 7.[illegible] Ammunition

	Ball	[illegible]	[illegible]
Overall length	[illegible]	[illegible]	[illegible]
Length of case	[illegible]	[illegible]	[illegible]
Length of projectile	[illegible]	[illegible]	[illegible]
Weight of projectile	[illegible]	[illegible]	[illegible]

Components:

[illegible]	[illegible]	[illegible]
Ball	[illegible]	Lead
Tracer	[illegible]	[illegible]
A.P.	[illegible]	[illegible]
Blank	Projectile of wood	
Blank	Projectile of paper	

[illegible] in which used:

Rifle	L. M. G.	H. M. G.
Type 99 rifle	Type 99 L. M. G.	Type [illegible] H. M. G.
Type 99 modified rifle	Type 99 [illegible]	Type [illegible]
Type [illegible] rifle		

[illegible] and markings:

[illegible]	Bands
Ball	[illegible]
Tracer	[illegible]
A.P.	[illegible]
Blank	[illegible]
Blank	[illegible]

Remarks. [illegible]

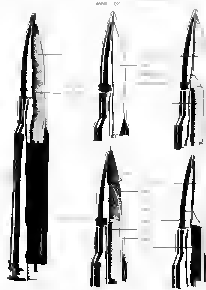


Figure 303—Type 92 [illegible]

[illegible]

[illegible]

Remarks: [illegible]

Figure 899—7.92-mm Aircraft Mounts. Gun Installation.

7.92-mm Aircraft Mounts—Gun Installation

	Bell	M.	Mounts	R.E.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	Pyro Bell	Projectile Jacket Aluminum	Mount
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Length
Length
Weight
Construction
Type
Proj. [illegible]
Proj. [illegible]

[illegible] Axmat Pole

Diameter [illegible] Foot
Length [illegible] ft.
Length of [illegible]
Weight of [illegible] [illegible]

Construction:
Type: Bullet.
Projectile: gilded [illegible]
Projectile cover: Lead.
Wound channel: [illegible]
Type of rifling: Multiple type.
Bullet and Warning pellet.

Remarks: The propelling cord is medium and made of brass. There [illegible] tap are [illegible] marks in that area round the [illegible] shell.

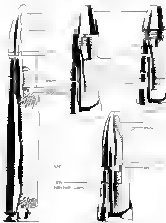


Figure 3007—19.2-mm Arms—Cartridge dismantled.

Figure 268—Type 97 and Type 98 20-mm Ammunition

Type 97 and Type 98 20-mm Ammunition

There are five [illegible] 20-mm [illegible] projectiles and [illegible] cartridge case. [illegible] cartridge [illegible] [illegible] Large-caliber [illegible]

Case. [illegible]
Length [illegible]
[illegible]

[illegible]

Propellant. [illegible]

20-mm High-Explosive [illegible] Projectile

Over-all length: [illegible] inches

Length of projectile: [illegible] inches

Weight of projectile: [illegible] pounds

[illegible]

[illegible]

(g) 20-mm High-Explosive [illegible] Projectile

Over-all length: [illegible] inches

Length of [illegible]: [illegible] inches

Figure 209—20-mm High-Explosive Tracer Projectile.

Figure 210—Type 98 20-mm High-Explosive [illegible] Projectile.

Filling: Cyclonite, [illegible] composition.
Fuzing: Type 91 [illegible] fuze.
Color and markings: Black body with red tip [illegible] of [illegible], green and yellow [illegible].

Stenciled on [illegible] base: 大八式

[illegible]

Remarks: [illegible]

[illegible] *[illegible] of Projectile*

Type 100 20-cm H. E. [illegible] Projectile

	[illegible]	[illegible]
Overall length	[illegible]	[illegible]
Length of projectile	[illegible]	[illegible]
Weight of projectile	[illegible]	[illegible]

Filling: Cyclonite, [illegible] composition.

Fuzing: Type 100 [illegible] projectile [illegible]

Color and markings: [illegible]

一〇〇式 stenciled on body [illegible]

[illegible] 一〇〇式 [illegible]

Stenciled [illegible]

一〇〇式 [illegible] stenciled on [illegible]

[illegible]

Remarks: [illegible]

[illegible]

[illegible]

[illegible]

90 — High-Explosive Incendiary (Mk. [illegible]) Projectile

[illegible]

[illegible]

Length of projectile: [illegible] inches.
Weight: projectile [illegible] ounces.
Filling: P. E. T. N. [illegible] incendiary composition.
Fuzing: Percussion.
Color and markings: Black body with red band [illegible] characters [illegible] are stenciled on the body.
Weapons in which used: [illegible] aircraft cannon.

Remarks. The projectile is made of steel [illegible] P. E. T. N. [illegible] projectile [illegible] P. E. T. N. [illegible].

[illegible]-mm High Explosive Incendiary Tracer Projectile

Over-all length: [illegible] inches.
Length of projectile: [illegible] inches.
Length of case: [illegible].
Fuze: [illegible] incendiary [illegible] composition.
Fuzing: [illegible].
Color and markings: Black body [illegible]

[illegible]

[illegible]

Weapons in which used: [illegible] aircraft cannon.

Remarks. The projectile is [illegible]

Figure [illegible]—[illegible]-mm High-Explosive Incendiary Tracer Projectile

[illegible] 90 Mod 5 Rifle [illegible] Projectile

[illegible] 90 Mod 5 [illegible] (Self-Destroying) Projectile

[illegible]

一〇式二粍

[illegible]

Remarks: [illegible]

[illegible] Armor-Piercing Tracer Projectile

[illegible]

ーασ式

Type 90

[illegible]

Figure 154—15-mm Anti-Personnel Projectile

Description. This projectile is a solid steel shot with tubular cavity drilled from the base. This projectile uses different natural uranium and mechanism is used for fuzing. There are three types of ammunition differing in grades, at least one of which

Ha-5 10-mm Ammunition

[illegible] 10-mm gun developed to de[illegible] which is of excellent design and

[illegible] or outside appearance [illegible] gun [illegible] 10-mm normal round [illegible] grain.

Case

Length 4.75 inches.

Diameter 0.4 inches.

Material Brass

Weight [illegible] grams

The case [illegible] contains powder and slight [illegible] forward to rear.

Propellant [illegible] grains of propellant [illegible] powder [illegible] cylindric grains

Figure 17 Ha-5 10-mm Ammunition

[illegible] incendiary composite

[illegible] Small tetryl booster in type [illegible] percussion-initiated fuze

[illegible]

[illegible]

[illegible]

Remarks. The difference between the type 2 and the type 2 modified [illegible] [illegible]

Figure [illegible] Type [illegible] and Type 2 Modified 20-mm High-Explosive Incendiary Projectile.

Type 2 and Type 2 Modified 20-mm H. E. I. Projectile

Overall length: [illegible] inches.

Length of projectile: [illegible]

Weight of [illegible]

Weight of filling:

Cyclonite [illegible]

Cyclonite [illegible] grams.

[illegible] grams.

Type 4 [illegible] H. E. [illegible] Projectile

Overall length: [illegible] inches.

Length of projectile: [illegible] inches.

Weight of projectile: [illegible] grams (fused).

Weight of fill[illegible]:

P. E. T. N.: [illegible] grams.

[illegible] grams.

Filling: P. E. T. N. and [illegible]

[illegible]

Fuzing: [illegible]

[illegible]

[illegible]

Remarks. [illegible]

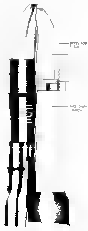


Figure 278—Type 88 mm High-Explosive Incendiary (MLE 88) Projectile

W. lb. of propellant
wh. metal grains
black or metal grains
black metal wh. grains
Weight of filling 0 grains
Filling Trinitroanisolene
Colour of filling
Fuze metal body metal
Ribbon metal black with green and spread band

Figure 279—Type 88 mm Anti-Tank Tracer Projectile

Figure 280—Type 88 mm Anti-Personnel Fragmentation Projectile

W. lb. of propellant
wh. metal
black or metal grains
black metal wh. grains
Weight of filling 0 grains
Filling Trinitroanisolene
Colour of filling
Fuze metal body metal
Ribbon metal black with green and spread band

[illegible] body [illegible]

[illegible] body [illegible]

[illegible]

[illegible]

Remarks: [illegible] of the projectile [illegible] of the [illegible]. The difference is [illegible] by the [illegible] markings.

[illegible] 75 [illegible] Proj[illegible] A

90-mm Practice Projectile

Overall length [illegible] inches.
Length of projectile [illegible] inches.
Weight of projectile [illegible] pounds.
Filling: None.
Color and markings: Blue, [illegible].

Remarks: The projectile [illegible] the type [illegible] projectile, [illegible].

37-mm High-Explosive Incendiary Projectile

Overall length of projectile: 38 mm [illegible] inches.
Length of complete round: [illegible] mm [illegible] inches.
Diameter of bourrelet: 37 mm [illegible].
Width of rotating band: [illegible] mm [illegible].
Weight of projectile [illegible] pounds.
Filling: [illegible] incendiary mixture.
Weapon: [illegible]
Case:

Length [illegible]
Diameter [illegible]
Weight [illegible]

The case is [illegible]

Remarks: [illegible]

[illegible]

Remarks: [illegible]

Figure [illegible]—[illegible]-mm High Explosive Incendiary Projectile

[illegible] an [illegible] projectile [illegible] [illegible] [illegible] [illegible]. The [illegible] [illegible]

[illegible]

[illegible] High Explosive Incendiary Projectile

[illegible] [illegible]

Length of [illegible] [illegible]

Fuze [illegible]

Weight of projectile [illegible]

Filling [illegible]

Figure [illegible]—[illegible]-mm High Explosive Incendiary Projectile

[illegible] 1944 [illegible]

[illegible] 88 mm.

Diameter at base: 88 mm.

Weight of projectile: [illegible] gm.

The shape of the ordinary type is slightly pointed.

Propellant: Cordite [illegible] powder [illegible] 90 mm separate charge loaded behind the projectile in a [illegible] cartridge case. The [illegible] of the propellant is 75 grams.

Color and markings: Black body and shot up yellow band behind the [illegible]

(Illus 84)

are marked on the body.

Fuzing: Type: [illegible] [illegible]

Remarks: The [illegible] for this No 204 were the same [illegible] the [illegible] 204 [illegible] but the [illegible] charge.

The projectile is constructed in two pieces, a straight, but weak body and an [illegible] nose cap [illegible] from the main body. There is only one [illegible] and [illegible] back the boundary and [illegible] [illegible] [illegible]

37-mm Practice Projectile

Overall length of projectile: 84 mm (3.3 in) [illegible]

Length of [illegible]: 44 mm (1.7 in) [illegible]

Weight of projectile: [illegible] 387 mm (15.2 in) [illegible]

Material of [illegible]: [illegible] steel.

Wire: [illegible] 1.5 mm.

Fuzing: [illegible]

Weapon in which used: [illegible] 37 mm, [illegible]

Color and markings: Black overall.

Remarks: [illegible]

Ballistics: [illegible] the [illegible] of [illegible] 37 mm [illegible] is [illegible] 0.5 [illegible] [illegible] [illegible] [illegible] [illegible]

Figure 104—37-mm Practice Projectile.

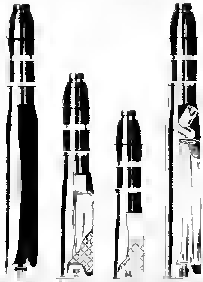


Figure 385—37-mm Assembly

[illegible]

Practice

[illegible]

Figure 256—37-mm. [illegible] High-Explosive Projectile.

Figure 257—Type 94 [illegible] Armor-Piercing High-Explosive Projectile.

[illegible] Explosive Projectile

[illegible]

Remarks: [illegible]

[illegible] 75-mm Armor-Piercing High-Explosive Projectile

[illegible]

Remarks: [illegible]

Figure [illegible]—Type [illegible] High-Explosive Projectile

Figure 1 The projectile is constructed of cast iron and steel. [illegible] can be clearly defined by cross-[illegible] marks. Some fuze details have not been given.

[illegible]-mm Plan 191 High-Explosive Projectile

Projectile Dimensions

Length of projectile	[illegible]	[illegible]	[illegible]
Length	[illegible]	[illegible]	[illegible]
[illegible]			

[illegible]-mm MO-300 High-Explosive Projectile

[illegible] 37-mm High-Explosive Projectile

	Type [illegible]	Type [illegible]
General dimensions	[illegible] mm	[illegible] mm
	[illegible]	[illegible]
Gross weight of projectile	[illegible] kg	[illegible] kg
	[illegible]	[illegible]
Bursting charge	[illegible]	[illegible]
Muzzle velocity	[illegible]	37 mm
Maximum range	[illegible]	[illegible]
Weight of [illegible]	[illegible]	[illegible]
Fuze	[illegible]	[illegible]
Projectile [illegible]		
Type	[illegible]	
Weight	[illegible]	
Type of [illegible]	[illegible]	

47-mm High-Explosive Projectile

Weight, complete round: [illegible] pounds.

Weight of projectile [illegible]

Weight of filling [illegible]

Filling: [illegible]

Weapon in which used: [illegible]

Fuzing: [illegible]

Figure 199—Fuze

Weight of projectile 8.200 [illegible] pound
Propellant: Single perforated [illegible] cm
8 inch long, [illegible] of graph
bed, double-base [illegible] 5.0
composition
[illegible] percent
[illegible] percent
[illegible] percent
[illegible] percent

1907 8-in. 47 mm. Bronze Breech-loading Howitzer.

1907 8-in. 47 mm. Bronze-B. using Projectile

Calibre 8 in. 203 mm.
Length of gun 47 cal. 9 ft. 10 in. 3000 mm.
Weight of gun 2,800 lb. 1270 kilogrammes
Weight of gun and carriage 4,500 lb. 2040 kilogrammes
Weight of carriage 1,700 lb. 770 kilogrammes
Weight of projectile 200 lb. 90 kilogrammes
Length of projectile 8 in. 203 mm.
Length of projectile and shell 10½ in. 267 mm.
Length of base of shell 2½ in. 64 mm.
Width of bearing band 1 in. 25 mm.
Diameter of shell 7½ in. 190 mm.
Weight of shell 200 lb. 90 kilogrammes
Weight of bursting charge 2 lb. 0·90 kilogrammes
Weight of fuze 1 lb. 0·45 kilogrammes
Weight of projectile complete 203 lb. 92 kilogrammes
Muzzle velocity 1,500 f.s. 457 metres
Muzzle energy 7,000 f.t.-tons 9,500 metre-tonnes
Elevation 45 degrees
Elevation 45 degrees

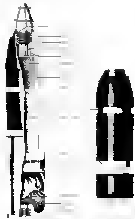


Figure No. [illegible] PD *Shell Bodies No. [illegible]*

Type 90 5.7 cm (2.3 in) HE Shell Projectile

Weight of complete round: [illegible] kg. (5.40 pounds).
Weight of projectile: [illegible] kg. (2.38 kg. 5.29 pounds).
Weight of HE: [illegible] kg. (0.25 kg.).
Filling: TNT.
Length of projectile: [illegible] mm (6.7 in.).
Length of projectile in [illegible] calibers: [illegible] (1.7 calibers).
Length: [illegible]
Length of body: [illegible]
Length of nose: [illegible]
Width: [illegible]
Weapons: [illegible]
Fuze: [illegible]
Fuze weight: [illegible]
Propelling charge: [illegible]

Figure 209—Type 94 J.G. Schrapnel Projectile

TYPE 90 7.7-cm (3 -inch) Schrapnel Projectile

Weight of complete round 6.84 kg (15 pounds)
Weight of projectile 6.50 kg (14.3 pounds)
Weight of filling 0.27 kg
Filling Black powder
Diameter at bourrelet 87 mm (3.4 inches)
Length of projectile (without cap) 355 mm (13.9 inches)
Length of projectile, mm (in.) (cap) 355 (13.9 inches)
Length of projectile (with cap) 355 (13.9 inches)
Width, rotating band 8 mm
Material Lead band Type 88 brass
Fuze Type 88 time
Fuze Type 88 time
Propellant 1.0 kg powder charge
Propellant 1.0 kg powder charge
Muzzle velocity 535 m/sec (1,755 f/s)

Remarks This projectile is fired with the Type 90 mountain gun.

Fig. 34 — Armor-Piercing Projectile

Type 99 3.7-cm (2-inch) Armor-Piercing Projectile

[illegible]

Figure 239—[illegible] M[illegible]—M[illegible] Mid-Explosive Projectile

[illegible] Mk-[illegible] High-Explosive Projectile

[illegible] close [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible]
Weight of filling [illegible] lbs
[illegible]
Diameter at bottom [illegible] in [illegible]

Length of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible]
Length of projectile [illegible] [illegible] [illegible] [illegible]
Length of projectile [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
Weapons [illegible] and [illegible] [illegible] [illegible]
Fuzes [illegible]
Propellant [illegible]

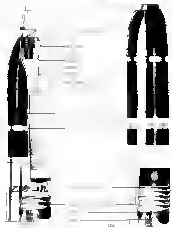


Fig. 266—Type 99 7-cm (Model 1) High-Explosive Projectile

Type 99 7-cm (Model 1) High-Explosive Projectile

Weight of complete round [illegible] kg. [illegible] grams
Weight of projectile [illegible] kg. [illegible] grams
Weight of filling [illegible] kg.

[illegible] of [illegible] [illegible] [illegible] of [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

Type
[illegible]

Propelle
[illegible]

Propellant. [illegible]

[illegible] *ze Selection Projectile.*

[illegible] ype 98 7mm (30-mm) Select ate Projectile

Weight of complete round [illegible] kgs
Weight of projectile-based [illegible]
Weight of propellant [illegible]
Muzzle velocity [illegible] 70 mm (plus 1.0
length of projectile (without base) 1.0" mm [illegible]
[illegible] projectile [illegible] of mm [illegible]
length of assembled round projectile base [illegible]
Cartridge case [illegible]
Diameter of base [illegible] mm (0% bottom)
Width of rotating band [illegible] mm.
Muzzle [illegible] Type 56 [illegible] gr (Short of)
Fuzing
Type [illegible] mm [illegible] [illegible]
Type [illegible] short-delay [illegible] [illegible] [illegible]
Propellant. Refer to the type 98 High-explosive projectile.

ype 98 7mm (30-mm) Hollow-Charge Projectile

Weight of complete round [illegible] kgs.
Weight of projectile (without fuze) [illegible] kg
Weight of [illegible]
Muzzle velocity [illegible] m/s
Filling [illegible] mm [illegible] of TNT and [illegible]
[illegible] compact [illegible] metal paper
Diameter [illegible] mm [illegible] of [illegible]

Figure [illegible] Hollow Charge Projectile

[illegible]

Operation. The [illegible] is fired [illegible] yellow band [illegible] [illegible] [illegible]

The [illegible] [illegible]

Type [illegible] (Hollow) [illegible] Projectile

Weight of [illegible]

Weight of [illegible]

Fuze [illegible]

Dimensions of [illegible]

Length of projectile [illegible]

Length of propellant [illegible]

Length of [illegible]

Width of [illegible]

Weight of [illegible]

Weapon [illegible]

Filling [illegible]

Propellant. [illegible]

Remarks. [illegible]

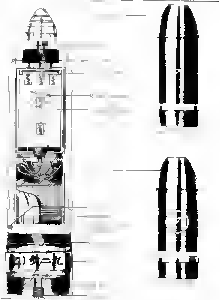


Fig. 1. Shell, 3-in. Gun, Shrapnel, Mk. I.

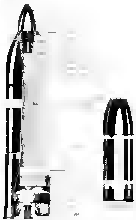


Figure 31—Type 92 [illegible]

Type 92 [illegible] (Heavy) High[illegible] Projectile

Weight of complete round: [illegible]
Weight of projectile: [illegible]
Weight of filler: [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Length of [illegible]
Diameter of [illegible]
Fuze: [illegible]
[illegible]
Fuzing: [illegible]
Propellant: [illegible]

Remarks. The projectile [illegible]

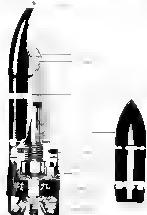


Figure 24 — 75 Armor-Piercing Projectile.

Type 95 3-cm (Nomen) Armor-Piercing Projectile

Weight of complete round 0.64 kg (9 pounds).

Weight of projectile fired [illegible] kg (2 pounds 6[illegible] ounces).

Weight of filling 0.17[illegible] kg.

Filling: Explosive, copper-capped filling. Powder charge [illegible] "Old Hercules" [illegible] per [illegible] parallel 3 percent by portion N.

Diameter of projectile [illegible] mm.

Length of projectile over [illegible] mm.

Length of complete round [illegible] mm.

Thickness of base of case [illegible] mm.

Width of crimping band [illegible] mm.

Projectile is solid base. Type 94 tracer.

Primer: Type 94 [illegible]

Propellant: [illegible] mm [illegible] grains.

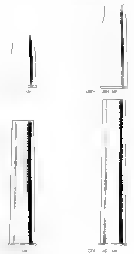
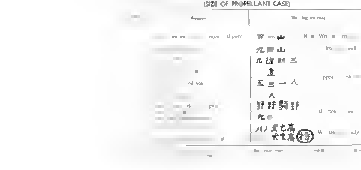


Figure 1.1.1 Non-functioning



INTRODUCTION TO ARMY [illegible] (75-mm) AMMUNITION

[illegible]

[illegible]ICATION OF JAPANESE ARMY 75-MM GUNS BY SIZE OF CHAMBER (SIZE OF PROPELLANT CASE)

[illegible]

Figure 2000—Fuze Propellant Cover.

Figure 343—7 in Pouch-Metal Case

Figure 286—Projectile Case

ARMY [illegible] COMPLETE ROUNDS

[illegible]

ARMY [illegible] COMPLETE ROUNDS—Continued

[illegible]

[illegible]

[illegible]

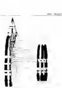


Figure 308. [illegible] High Explosive [illegible] Projectile [illegible]

[illegible] (75-mm) [illegible] A. A. Long Pointed Projectile

Weight of projectile filled [illegible] by [illegible] pounds.

Weight of filling [illegible]

Filling [illegible]

Diameter [illegible]

Length [illegible]

Width [illegible]

Width [illegible] rotating band [illegible]

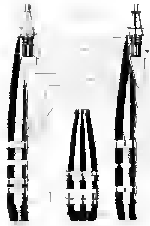
Width of [illegible]

Width of [illegible]

Width of [illegible]

Distance [illegible]

Fuze: [illegible]



[illegible]

Markings: [illegible]

Type 88 fuze [illegible]

Type 88 [illegible]

Remarks: [illegible]

Type 94 [illegible] High-Explosive Projectile

[illegible]

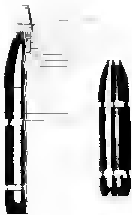


Fig 251— 100 kg 7.7 cm High-Explosive Bomb

Fuzing: Type 88 instantaneous nose fuze (para 1320). Type 88 time and delay nose fuze (para 1321).

Weights: Bomb complete: Type 88 instantaneous 8 kg (17 lb 8 oz). Type 88 time and delay 8 kg (17 lb 8 oz). Type 88 time 8 kg (17 lb 8 oz). Type 88 delay 8 kg (17 lb 8 oz). Type 88 delay 8 kg (17 lb 8 oz). Type 88 delay 8 kg (17 lb 8 oz). A special Case [illegible] to be [illegible] Case [illegible] be broken.

Remarks: The [illegible] more or less [illegible] H. E. [illegible] 7.7 H. E. [illegible] an hard [illegible] 90, and be [illegible] be [illegible] commercial [illegible] The explosive [illegible] Case [illegible] be [illegible] The [illegible] Case [illegible] should be [illegible] 90 [illegible]

[illegible] High-Explosive Projectile.

[illegible]

Fuze (25-mm) Design A, High-Explosive Projectile

[illegible]

Length overall [illegible]

[illegible]

Figure [illegible] — [illegible] Range [illegible] High-Explosive [illegible]

[illegible] Range [illegible] High-Explosive Projectile

[illegible]

Remarks: [illegible]

[illegible] 99 Modified [illegible] mm (25-mm) High-Explosive Projectile

Weight, projectile filled: [illegible]

Weight [illegible]

Filling: TNT [illegible]

[illegible]

Length [illegible]

Length protruding [illegible]

Width of rotating band: [illegible]

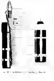
[illegible]

Fuze: [illegible]

Type [illegible]

Type 94 [illegible]

Remarks. [illegible]



[illegible] 25 [illegible] 99 Modified [illegible] High-Explosive Projectile

[illegible]

[illegible] Fig. 93 — 10 Kg. Anti-Concrete Incendiary Bomb

Chemical Anti-Concrete Incendiary Bomb

[illegible]

[illegible] 55 [illegible] 57 Right-hand [illegible] [illegible]

[illegible] 6" [illegible] 75-mm M. E. Sentinel Projectile

[illegible] 50 lb. [illegible] 4[illegible]

[illegible] 20 [illegible] 1[illegible]

[illegible] 2[illegible] [illegible] 1[illegible]

Length [illegible]

[illegible]

[illegible]

[illegible]

Weapons [illegible]

Type [illegible] Chem. [illegible]

Remarks: Assembled for [illegible] at the [illegible] Depot. [illegible] Japanese [illegible] Weapons Division [illegible]

90 "90"-A Type 91 and Detonator Projectile

Weight [illegible] filled 1.1 kg (2.43 lb)

Fig. 256. Type 90 A [illegible] Projectile

Filling: [illegible]

Length [illegible]

Length [illegible]

Weight [illegible]

Fuze [illegible]

Weight [illegible]

Type [illegible]

Remarks: [illegible] of the [illegible]

Type 3 Tear (Bomb) Hollow-Charge Projectile

Weight of [illegible] filled [illegible] kg [illegible] lb.

Material [illegible]

Filling [illegible] of [illegible] TNT and [illegible] picric [illegible] 2,4,6-[illegible]

Remarks: [illegible] 70.0 mm [illegible] [illegible]

Length [illegible]

[illegible] 2.0 mm 0% value

Value of [illegible] 1.1 lb

Fuze: Type 3 [illegible]

Operation: [illegible]

[illegible]

Type [illegible]

Remarks: [illegible]

Type [illegible]

Type [illegible]

Remarks: [illegible]

Type [illegible]

Type [illegible]

Remarks: [illegible]

[illegible]

[illegible]

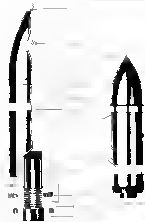


Figure 34 Type 89 — see Ammunition Chart

Type 89 — 105 (75.5-mm) Aircraft Flare-Illuminating Projectile

[illegible]

Fuze

[illegible]

Propelling Charge

[illegible]

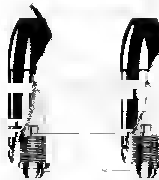
Primer

[illegible]

[illegible]

[illegible] **Table 75-mm Armor-Piercing Projectile**

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]



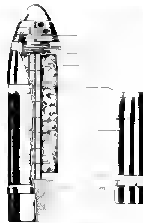
[illegible] [illegible] [illegible] Armor-Piercing Projectile.

[illegible] Type [illegible]

[illegible]

[illegible]

[



[illegible] Shrapnel Projectile

[illegible] Shrapnel Projectile

[illegible]

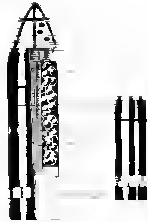


Figure 44-[illegible]. Type 88 Rocket Shaped Projectile

[illegible] Type 88 [illegible]

[illegible] 1 [illegible] 1 [illegible] 1

[illegible]

FIGURE [illegible]—[illegible] Projectile

[illegible]

[illegible] Projectile

[illegible]

[illegible]

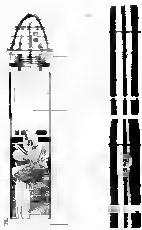
[illegible] 19 [illegible] Incendiary Projectile

[illegible]

Operation [illegible]

Figure [illegible] Incendiary Projectile

Remarks [illegible]



Figs. 368—gun 96 7·5cm Howitzer (Type 88)

Type 88 7·5cm 75-mm H mountain Projectile

Weight of projectile, filled (Pattern) 6·50 kg
Filled explosive
Weight of filling (by compound) kg. 0·25
Fuzes
Fuzes:
Impact or charge (high explosive) [illegible]
Flammable compound [illegible]
Delayed [illegible]
Time or impact [illegible]
Length [illegible]
Length [illegible]
Filled
Weight of [illegible]
Tracer [illegible]
Range
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

Figure 264 [illegible] Projectile

[illegible]

Color marking: [illegible]

[illegible]

[illegible]

Weight [illegible]

Bursting charge [illegible]

[illegible]

Length [illegible]

Figure 367—[illegible] Incendiary Projectile

Length [illegible] from [illegible] 762 mm [illegible]

Width of [illegible] 0 mm

[illegible] Type [illegible] [illegible]

Weight [illegible]

Type [illegible]

Type [illegible]

Type [illegible]

Type [illegible]

Remarks. [illegible]

Figure [illegible] Hand Gas Projectile

[illegible] Hand Gas Projectile

[illegible]

[illegible]

Length [illegible]

Length protruding from [illegible]

[illegible]

[illegible]

Type 00 8-cm (80-mm) 99 (1-5) Explosive-A A Lump Pot and Projectile

[illegible]

[illegible]

[illegible]

[illegible] Ballistic Projectile

Weight of projectile filled: [illegible]

Length [illegible]

Type of fuze: [illegible]

Filling: TNT

[illegible]: [illegible]

[illegible] Projectile

[illegible] High-Explosive Secondary Projectile

Weight of projectile filled: [illegible]

Weight of [illegible]

Filling: TNT

Maximum [illegible]

Length [illegible]

[illegible]

[illegible]

Hanger [illegible]

Hanger [illegible] **which** [illegible] **and** [illegible]

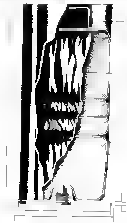


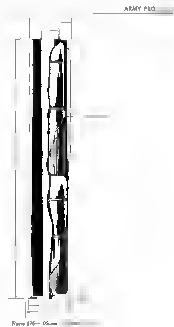
Figure 3.12 — Ulcer de decubito

PROPELLANT CHARGES USED FOR VARIOUS WEAPONS

Weapon	Type Propellant	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]		[illegible]

Figure [illegible] 105-mm [illegible] M1 [illegible] Gun

Fig. 1 Shrapnel shell


ARMY PILO
Pattern 1916—Wooden

Sl. 3.16 – D mehanizem

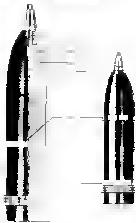


Figure 89—Type 89 Non-High-Explosive Shells

Type 89 8-cm (105-mm) High-Explosive Projectile

Weight of projectile [illegible] kg [illegible] pounds
Weight of filling [illegible] kg [illegible] pounds
Fill of filling [illegible]
Dimensions [illegible] mm [illegible]
Length [illegible] mm [illegible]
Length [illegible] mm [illegible]
Length [illegible] mm [illegible]

Type [illegible]
Type [illegible]
Weight [illegible]
Type [illegible]
Weight [illegible]
Type [illegible]

Figure 378. [illegible] Brass Mark Exclusive [illegible] Polished Polycrystalline

[illegible] 91. 3-mm (0.5-mm) High-E [illegible] Lamp-Polished Polycrystalline

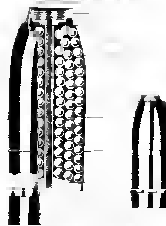
[illegible]

[illegible]

[illegible]

ARMY FIGURE [illegible]

[illegible]



[illegible] Sources [illegible]

Fig. 288. Boat Arrow Pin, 19 Hydrophobia, Permanent

Figure 267— [illegible]

PROPELLANT CHARGES USED FOR VARIOUS WEAPONS

Weapon	Age of propellant	Probable of propellant high	Number of bag charges	Number of bag charges
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

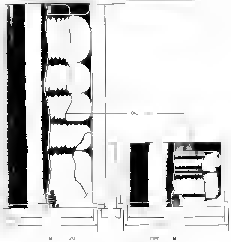


Figure 300—1/50 scale after Mitsuhiro Ozawa.

Figure 7B.2—Assembled

Figure 6994—Fifth area Number Six

Apis 385—75 *sur dimension.*

[illegible] High-explosive Fuzes

Figure 92. 3-cm (120-mm) High-E plastic Projectile

Weight of projectile complete: [illegible] pounds

[illegible]

5-in (130-mm) High-Explosive Projectile

Figure 111—Type [illegible] 5-in High-Explosive Long-Painted Projectile.

[illegible] — [illegible] — High Explosive Incendiary Projectile

Fig. [illegible] Section Through Hull Explosive Long-Tailed Projectile

[illegible]

Table 48. 3-in. (150-mm) High-Explosive Long-Pointed Projectile

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Diameter	[illegible]	[illegible]	[illegible]
Length	[illegible]	[illegible]	[illegible]

Type 50 gun
Type 50 gun Case 46Ka tracer
Type 50 gun Case 46Ka tracer
Type 50 gun Case 46Ka tracer

Figure 168—Type [illegible] High-Explosive Long-Pointed Projectile.

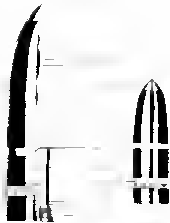


Figure 193 Type 88 Low Angle Antiaircraft Shell, Type 88 Projectile

Type 95 5-inch (130-mm) Antiaircraft Shell
High Explosive Projectile

[illegible]

[illegible]

[illegible]

[illegible]

Scale [illegible] Army Rocket Flight Engineering Prospect

Weight of rocket [illegible] lbs. [illegible] lbs. at ground
Weight of charge [illegible] lbs. [illegible] gas cell
Firing Power [illegible] 40 [illegible] projectile
[illegible]
Diameter [illegible] 19.5 mm. [illegible]
[illegible]

Fig. 29 — Army A mag High-explosive Projectile

Length [illegible] 3[illegible] mm. [illegible] the [illegible] mm. [illegible] Radius).
[illegible] Rocket [illegible]
[illegible] Rocket [illegible] lbs. [illegible] lbs.
Fuse [illegible] Type 38 small bore
Weapons in [illegible] used
Type 88 gun.
Type 40 gun, Cam. [illegible] carriage
Type 40 gun, Cam. [illegible] carriage
Type 40 gun, Cam. [illegible] carriage
Type [illegible] carriage, Cam. [illegible] carriage
Type 38 [illegible]
Type 38 howitzer, Cam. [illegible] carriage
Type 38 howitzer, Cam. [illegible] carriage.

Remarks: When this rocket [illegible] howitzer is used [illegible] type [illegible] is used as guide it has [illegible] mounting [illegible]

Type 15-Year Rocket (W. P.) Project

Weight: projectile filled or [illegible] lbs. [illegible] lbs. [illegible] lbs.
Bursting charge: [illegible] and [illegible] pounds
Combustion agent: [illegible] lb. [illegible]
Wing: [illegible] wings [illegible] below the bottom [illegible] movements enable the projectile to [illegible] [illegible]
Diameter at bottom: [illegible] mm. [illegible]
Length over all (without fuse): [illegible] inches
Length measuring from cone [illegible] [illegible] 1.4 mm (50% inches)
Weight of bursting bomb: [illegible] lbs.
Fuse: Type [illegible] [illegible] mm. [illegible] mm. [illegible]

Figure 370—Type [illegible] Jumbo Oil P. [illegible]

Weapon length and
Body [illegible] inches
[illegible]
[illegible]
[illegible]

20-mm. [illegible] Armor-Piercing High-Explosive Projectile

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Figure 359—20-mm. Armor-Piercing High-Explosive Projectile.

[illegible] Armor Piercing High Explosive Projectile

[illegible] Armor Piercing High Explosive Projectile

[illegible]

ARMY ROCKETS

Figure 246—38 mm High-Explosive Spin-Stabilized Rocket

38 mm M. B. Spin-Stabilized Rocket

unrotated round

Weight of complete round 4.86-5.0 pounds (2.2 kg)

Length of complete round (with fuze) 20-40 inches

Head

Weight of first load [illegible] pounds

Weight of filling [illegible] 5.7 oz.

Length of head [illegible]

Diameter of fuze [illegible]

[illegible]

Chapter 4—Section

ARMY MORTARS

[illegible]

Description. The [illegible]

[illegible]

Remarks. [illegible]

Figure [illegible] [illegible] Section [illegible] Mark Engine [illegible]

The [illegible] [illegible] [illegible]

type 93 38-mm Double Mortar

[illegible]

[illegible]

[illegible]

fig. 397 type 93 38 mm Double Mortar

Description. [illegible] a [illegible] of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. **Operation.** [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] Fig. 48 [illegible] [illegible].

[illegible] Boundary Marker

Weight: [illegible]
Weight [illegible]
Filling: [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Over-all length: [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Fuzing: [illegible]
Weapon in which used: [illegible]

Description. [illegible]

Operation. [illegible]

Supply. [illegible]

[illegible]

[illegible] 80 mm Flanged Bangalore torpedo

[illegible]

Description. [illegible]

Weapon [illegible] Type [illegible] discharger [illegible]

Description. [illegible]

Figure [illegible] Mine High-[illegible]

Type [illegible] Mine High-Explosive Marker

Weight [illegible] pounds
Weight [illegible]
[illegible]
[illegible] MDT
[illegible]
[illegible]

Description. [illegible]

[illegible] High-Explosive [illegible] Aircraft Torpedo Marker

[illegible]
[illegible] MDT
[illegible]

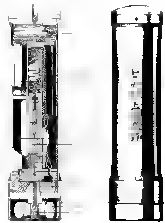


Figure 102—Tubular High-Explosive Shell and Mortar Barrel

for bed blocks over-all length [illegible] 3 feet barrel size [illegible] maximum [illegible] diameter.

B, cylinder. Steel over-all length [illegible] inch and bored, diameter end.

Weapon: Bed, used Model [illegible] Barrel, [illegible] cylinder.

Description: The cylinder and mortar of the [illegible] are a sliding series and are [illegible] which is an H. E. explosive and pyrotechnic. A metal shell base is provided to be [illegible] shell, and provision is made for mounting [illegible] bed blocks, that projection extending [illegible] an old mortar. The drive [illegible] bed blocks provide [illegible] stung which [illegible] shell. The [illegible] and [illegible] in the projection [illegible] cylinder head or ordnance operation are held in position by adhesive tape. A wooden plug is [illegible] bed projection shape is formed out of this [illegible].

The ammunition consists [illegible] wooden plug as the base behind the [illegible] before shipping, and shell which provides charge to eject the [illegible] cylinder from the mortar. The steel [illegible] cylinders are closed [illegible] base as discussed in

the [illegible] [illegible] [illegible] [illegible] [illegible] which is [illegible]. [illegible] [illegible]. The [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. The length of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. Thus, the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Figure 263— Type 97 [illegible] High-Explosive [illegible]

[illegible] [illegible].

Type 97 [illegible] High-Explosive [illegible]

Weight complete round: [illegible] pounds.

Weight main charge: [illegible] pounds.

Body [illegible] [illegible]:

[illegible] [illegible] [illegible]

[illegible] [illegible]

[illegible]:

[illegible] [illegible] [illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

Overall length [illegible] [illegible] [illegible].

Length [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible].

Color: [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Fuzing: Type [illegible] [illegible] [illegible] [illegible] [illegible].

Weapons [illegible] [illegible]:

Type [illegible] [illegible]

Type [illegible] [illegible]

Description. [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible]

[illegible] Mortar

[illegible] Mortar

[illegible]

[illegible]

Weapons in which used:
Type [illegible]
Type [illegible]

[illegible]

Three Position H. E. Mortar

[illegible]

[illegible]

[illegible] ... welding for ... [illegible] ... contained in the ... [illegible] ... Propellant ... [illegible] ... and ... [illegible] ... designed by the ... [illegible]

81-mm Parachute H. E. Smoke Mortar

Weight ... lbs. round ... [illegible] ozs.
Weight explosive ... [illegible]
Explosive composition ... [illegible]
Overall length ... [illegible] inches
Length of shell (less projectors ... [illegible]) ... [illegible] inches

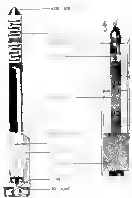


Figure 266—81-mm Parachute High-Explosive Smoke Mortar

[illegible] cord body [illegible] primer. However, [illegible] 3, 6 and 8, are [illegible] detonated and vacuum tube [illegible] to body. [illegible] primer tube [illegible] to body. [illegible] tube [illegible] to body. [illegible] tube [illegible] to the bottom of the upper oil cylinder [illegible] to small pulsator (no pulse of upper oil [illegible] portion below and passage through the [illegible] in the H. C. [illegible] in the upper [illegible] primer tube [illegible] primer. [illegible] primer tube [illegible] primer. [illegible] primer [illegible] to the [illegible] cylinder [illegible] to the [illegible] pulsator [illegible] to the [illegible] pulsator [illegible] to the [illegible] and lock [illegible] burns [illegible] through the [illegible] the H. C. [illegible] the upper [illegible] the [illegible].

91 mm Photoelectric Pistol

A. [illegible] complete [illegible] 4.96 pounds
B. [illegible] flash [illegible] 4.96 pounds

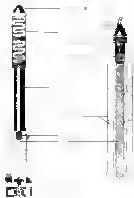


Figure 20—91 mm Photoelectric Pistol Mortar

Note.

Data ar

Data

length

Ar

Weapo

ar

Description

[illegible]

Figure 84. 90-mm High-Explosive Mortar.

Weight, complete, equipped 28 pounds.
Weight, mortar tube 22 pounds.
Elevation 45°
Minimum elevation 15°
Traverse Fixed, improved
Over-all length 1 meter from 1.10 meters.
Length, in calibers 16.5 calibers
Maximum elevation traverse 54 inches
90 mm
Maximum diameter 7.5 mm 90 inches
Color Olive drab over all steel, and yellow brass, before the Revolution

Figure 85— 90-mm M-36 Explosive Mortar.

Firing Type 84 Ammunition Short-delay mortar bomb
Weapon [illegible] and.
Type 84 90-mm mortar.
Type 84 90-mm mortar
Ammunition Type shell or fuzzle of [illegible] mm in mm type 84 90-mm mortar shell.

Figure 303—Type 94 90-mm Base Burst High Explosive Mortar

Type 94 90-mm [illegible] H. E. Mortar

Weight complete round: [illegible] pounds
Weight main charge: [illegible]
Explosive components:
 Main Charge: TNT
 Booster: [illegible]
 Propellant: [illegible]
Overall length (with fuze): [illegible] inches
[illegible]
[illegible]
[illegible]
[illegible]

[illegible] instantaneous-delay fuze
Fuzes: [illegible]
 Type 93 [illegible] fuze
 Type 97 [illegible] fuze

Description: This shell is similar in design to the Type 94 Mortar H. E. shell except that it is made of [illegible] or [illegible] instead of [illegible] steel.

Type 94 90-mm Incendiary Mortar

Weight complete round: [illegible] pounds
Weight incendiary mixture: [illegible] pounds
Weight burster charge: [illegible]
Explosive components:
 Burster Charge: [illegible]
 Propellant: [illegible]
Incendiary filling: Phosphorus [illegible] pellets and [illegible] cylindrical rubber pellets
Overall length (including fuze): [illegible] inches
Length (w/o fuze): [illegible] inches
Maximum [illegible] diameter: [illegible] inches
Thickness of walls: [illegible] inches
Color: Black body with blue band around nose, [illegible] band between the [illegible] and [illegible]
Fuze: Type [illegible] instantaneous-delay fuze [illegible]
Fuzes: [illegible]
 Type [illegible] mortar
 Type [illegible] mortar

Description: This shell is similar in shape to the [illegible]

[illegible]

Figure 150. [illegible] 81-mm [illegible] Mortar

band of [illegible] between [illegible] There is white band [illegible] shell body [illegible]

[illegible] 81-mm High-Explosive Mortar

Weight complete round: [illegible] pounds.
Weight of charge: [illegible] pounds.
Explosive: [illegible]
[illegible] TNT
Amatol, 50/50, and [illegible]

[illegible]
[illegible]
[illegible]
[illegible]
Color: [illegible]
[illegible]
Fuze: [illegible]
[illegible]
Propellant: [illegible]

Description. [illegible]

Figure 151. Type E 81-mm High-Explosive Mortar

[illegible] The [illegible] The [illegible] body [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Remarks: [illegible]

Fig. [illegible] Type [illegible] Mortar

Type 94 [illegible] mm High-Explosive Mortar

Weight complete round [illegible] pounds.
Weight of charge [illegible] pounds.
Explosive charge [illegible]
[illegible] TNT
[illegible]
[illegible]
[illegible] and [illegible]
[illegible] percent
[illegible] percent
[illegible] percent
[illegible] percent
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Remarks: [illegible]

Type 97 [illegible] mm High-Explosive Mortar

Weight [illegible]
Weight [illegible]
[illegible]
[illegible]
[illegible]

Figure [illegible] HE [illegible] High-Explosive [illegible].

Propellant:
- Nitrocellulose and graphite: [illegible] percent.
- Nitroglycerine: [illegible] percent.
- Diethyldiphenylurea: [illegible] percent.
- Diphenylamine: [illegible] percent.
- Potassium nitrate: [illegible] percent.

Overall length (without fuze): [illegible] inches.

Length to [illegible]: [illegible] inches.

Maximum diameter: [illegible] inches [illegible].

Maximum diameter of fins: [illegible] inches.

Color: Black with [illegible] yellow band [illegible] before the [illegible].

[illegible]

[illegible]

[illegible]

[illegible] Spigot-Type Mortar

Weight complete: [illegible] pounds.

Weight [illegible]: [illegible] pounds.

Weight [illegible]: [illegible] pounds.

Weight [illegible]: [illegible]

Weight [illegible]: [illegible]

Explosive [illegible]:
- [illegible]
- [illegible]
- Propellant: [illegible]

Overall length [illegible]: [illegible] inches.

Length [illegible]

Length [illegible]: [illegible] inches.

[illegible]

Color: [illegible]

Fuzing: [illegible]

Weapons: [illegible] and Spigot [illegible].

Description. [illegible]

The [illegible]

The [illegible]

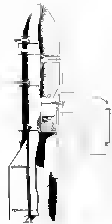


Figure 96—75 mm Shipper Shell Warren

[illegible]

ARMY PROJECTILE FUZES

[illegible]

[illegible]

[illegible]

[illegible]

Operation. The cartridge case which supports the striker is held in [illegible] and allows firing and the projectile [illegible]

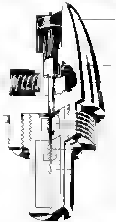


Figure [illegible] Type [illegible] [illegible]

Type 100 Series I Instantaneous Fuze

[illegible]

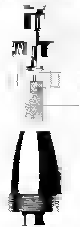


Figure 297.— Type 2 Small Instrumental Fuze.

TYPE 2 SMALL INSTRUMENTAL FUZE		Over-all length with plate	No. 206
		Threaded length	1
2-3	Series G. H.	63 cavities	K. sizes of threads	8

Construction: [illegible]

Operation: [illegible]

[illegible] Modified [illegible] Fuze

[illegible]

Description:

Overall length [illegible]

Threaded length: [illegible]

Diameter of threads: [illegible]

Construction: This is a [illegible]

Operation: [illegible]

[illegible]

Fig. 1 ... Detonating Fuze
.....Spring Detonating Fuze
in Mod-Sterm B. 1. 9 projectiles.

Description

Dimensions

Construction

Operation

[illegible] Impact Fuze

[illegible]

Description

[illegible]

Construction: [illegible]

Operation: [illegible]

Figure [illegible] Impact Fuze

Figure [illegible] [illegible] [illegible]

[illegible] 88 [illegible]

[illegible]

Overall length [illegible]

Overall length [illegible]

[illegible]

[illegible]

[illegible]

Construction. The [illegible] [illegible] upper part is [illegible]

[illegible]

[illegible]

[illegible]

Short-Delay (Gas and Howitzer) Mortar Fuse

[illegible]

Fig. [illegible] Short-Delay (Gas and Howitzer) Mortar [illegible]

[illegible] grains [illegible]

[illegible]

[illegible]

[illegible] length [illegible] inches.

[illegible]

Thread [illegible]

Construction. [illegible]

[illegible]

[illegible]

[illegible] Fuze [illegible]

[illegible]

Construction. [illegible]

Figure [illegible]

Operation. [illegible]

Remarks. [illegible]

Type [illegible] Instantaneous—Short-Delay Fuze

[illegible]

[illegible] [illegible]

Figure [illegible]—Type [illegible] Instantaneous—Short-Delay Fuze.

[illegible]

Operation. [illegible]

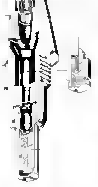


Figure [illegible]—Type 91 Instantaneous—Short Delay Fuze.

Type 91 Instantaneous—Short Delay Fuze

Use. [illegible]

Dimensions:

Overall length (with gaine) [illegible] inches.
Overall length (less gaine) [illegible] inches.
Maximum diameter [illegible]
Threaded length [illegible]
Diameter at threads [illegible]

Construction. [illegible]

Operation. [illegible]

Figure [illegible] (b) Inertia-open-Shell-Delay Fuze

Type [illegible] 30 Instantaneous—Shrapnel or Percussion

Cap H E projectile for [illegible] and other [illegible]

Description

[illegible] Construction [illegible]

[illegible]

Bound Bangalore Torpedo Fuze

[illegible] Bound Bangalore torpedo [illegible]

[illegible]

Figure [illegible]—Bound Bangalore torpedo Fuze.

[illegible]

[illegible]

Type 99 [illegible] Fuze

[illegible]

Description:

Overall length [illegible]

Maximum diameter [illegible]

Threaded length [illegible]

[illegible]

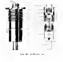


Figure [illegible]

Construction. In the assembled [illegible] [illegible] [illegible] only. The [illegible] are [illegible] by [illegible] and striker housing. The upper [illegible] [illegible] [illegible] [illegible] and [illegible] are used for [illegible] spring [illegible] safety fork. Below the [illegible] [illegible] black powder. The safety plunger [illegible] against the [illegible] by the safety [illegible] spring which also holds against the [illegible] striker housing. Two safety plungers [illegible] the safety plunger [illegible] through [illegible] to the [illegible] [illegible]. The [illegible] [illegible] from [illegible] [illegible] safety spring [illegible] fork.

Operation. The upper safety fork is removed from [illegible] in the [illegible] [illegible] [illegible] [illegible] [illegible] of the [illegible]. [illegible] the [illegible] striker [illegible] the [illegible]. The [illegible] [illegible] the black powder [illegible] and allows the safety plunger [illegible] to move forward. This [illegible] safety plungers [illegible] [illegible] the striker [illegible] [illegible] the [illegible] forward against the [illegible] spring and [illegible] the [illegible] [illegible].

Type 89 Small Case Fuze

[illegible] Bombs [illegible] for 10, 30 [illegible] [illegible] and [illegible] [illegible] for the [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]

Construction. The fuze is made of brass [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] by [illegible]. There are two [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

The striker is also supported by a safety [illegible] [illegible] [illegible] the [illegible] of the fuze.

Operation. The [illegible] [illegible] [illegible] the striker [illegible] the [illegible] of the [illegible].

Remarks. This fuze [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

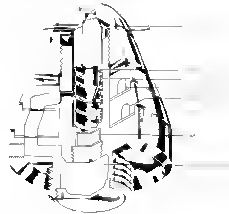


Figure 3[illegible]—Fuze 49 Sand Time Rate.

Type 88 Powder Time Fuze

Used [illegible] projectiles [illegible] anti-aircraft guns.

Description:

Overall length [illegible] inches.
Maximum diameter [illegible] inches.
Threaded length [illegible].
Number of threads [illegible] right hand.

Construction. [illegible] surrounding the spindle, the [illegible] [illegible] [illegible] [illegible]. [illegible]

[illegible]

[illegible]

Auxiliary Detonating Fuze

Use. In conjunction with the type M [illegible] powder [illegible] type [illegible] [illegible] and [illegible] type [illegible] [illegible] fuze.

Description.

Overall length: [illegible] inches.
Length [illegible]: [illegible] inches.
Diameter [illegible]: [illegible] inches.
Threaded length: [illegible] inch.
Number of threads: [illegible] right-hand.

Figure [illegible] Auxiliary detonating fuze.

Construction. This fuze is made of two brass sections. The top part [illegible]

Operation. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Type 3rd Y Combination Powder Train and Impact Fuze

Used: [illegible] and old H. E. projectiles.

Description:
Overall length: [illegible] inches.
Maximum diameter: [illegible] inches.
Threaded length: [illegible]
Material: [illegible], right hand.

Construction. This fuze [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible] magazine. [illegible] was 0 to [illegible]

Operation. Before the [illegible] the safety pin is removed and the [illegible] of the [illegible] the

[illegible] provided [illegible] black powder magazine.

Type 34-Van Combination Powder Time and Impact Fuse

The [illegible] detonating boosters and [illegible] ing projectiles [illegible] designed and [illegible] [illegible] and [illegible] designed and [illegible] [illegible]

Figure 20—Type [illegible] Combination Powder Time and Impact Fuse

Description.

Overall length, [illegible] inches.

Maximum diameter, [illegible] inches.

Thread length, [illegible] inch.

[illegible]

Construction: [illegible]

Operation: [illegible]

Camouflage: [illegible]

Type 100 Mechanism: Base and [illegible] Base

[illegible]

Description.

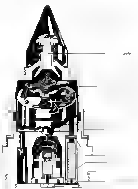
Overall length, [illegible] inches.

Maximum diameter, [illegible] inches.

Thread length, [illegible] inch.

[illegible]

Construction: [illegible]



Fuze 254—.303 Mark [illegible] and Fuze 256—.303.

[illegible] Fuze 254 is a modification of the Fuze 256 in that the detonator fitted in the primer carrier is replaced by a retaining [illegible] Mark.

Operation

Fuze Set Heavy (2 [illegible] Cordite) [illegible] is set the detonator fitted in the primer carrier and the primer carrier is [illegible] the primer [illegible] Fuze 256 the same applies [illegible] small Mark rocket charge [illegible] the base of the [illegible] which is fired [illegible] ignition of the auxiliary detonator [illegible] the [illegible] Fuze 254 [illegible] the [illegible] detonator fitted in conjunction with the Fuze 256.

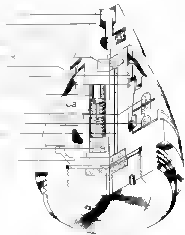


Figure 56—Type 3 Combustible Powder [illegible] [illegible]

Type 3 Combustible Powder Tray and Transport Frame

M. U. [illegible] [illegible]

Introduced [illegible]

Dimensions

Overall Length [illegible]

Overall Height [illegible] [illegible]

Overall Width [illegible]

Weight of [illegible] [illegible]

Construction. This [illegible] and diaphragm. The [illegible] primary charge [illegible] of brass [illegible] plug [illegible] is [illegible].

The [illegible]

The [illegible]

The [illegible] the [illegible] and [illegible] the [illegible] body.

[illegible]

[illegible]

[illegible] and primer cup.

[illegible] the [illegible] upper [illegible] ring.

The [illegible]

Operation.

[illegible] the primer cup. The flash [illegible] the [illegible] to the black powder magazine in the base.

Type 94 Small-Delay Base Fuze

Use: A.P.H.E. projectiles [illegible] and medium guns.

Dimensions:

Over-all length: [illegible]

[illegible] diameter: [illegible]

Thread length: [illegible]

[illegible]

Construction. [illegible]

Fig. 1 — Sectional View of Small-Midget Type Boat

Cyp. Lika [illegible] [illegible] [illegible]

Fig. 28 Small Short Pulley Bore Keep.

[illegible]

Small Bell & Pen Orientating Press

[illegible]

Figure 338—All 7.5mm Bus-Delayed Fuze

[illegible]

Small Fuze, Base Detonating

[illegible]

Figure [illegible] Small Base Detonating Fuze

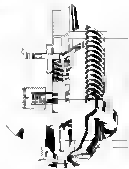


Figure 290—[illegible] [illegible] Base Fuze

[illegible] [illegible] Base Fuze

[illegible]

Description:

[illegible]

Construction. [illegible]

[illegible]

Operation. [illegible]

Type 88 Fuze [illegible] Base Fuze

[illegible]

Overall length: [illegible]

Diameter [illegible]

Threaded length: [illegible]

Construction. [illegible]

[illegible] Type 88 Fuze [illegible] Base Fuze

[illegible]

Type 99 Small (Quick) Base [illegible]

[illegible]

Description:

Overall length [illegible]

Diameter [illegible]

Thread [illegible]

Material [illegible]

Construction. [illegible]

Operation. [illegible]

[illegible]—Type 99 Small (Quick) Base Fuze.

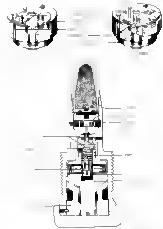


Figure 2[illegible]—Type 93 Large (Mk 2 Mod 1) Base Fuze

Type 93 Large (Mk 2 Mod 1) Base Fuze

[illegible]

[illegible]

Overall length [illegible]

Length within [illegible]

Maximum diameter [illegible]

Threaded length [illegible]

Threads [illegible] right-hand

Construction: [illegible]

[illegible]

[illegible]

Operation. [illegible]

Remarks. The arming of [illegible]

Fig. 341.—Type 85 Valve, Side

Type 85 Valve in Bronze Frame

as Type 85, see 4 P. 31 E. Catalogue.

Overall height 5⅝ inches.

Diameter of valve body inches.

Diameter of mouth ⅝ inch.

Weight of valve 1 lb.

Construction This valve is identical in size and in all its details with the type 85 large 5⅝ × ⅝ inch bronze frame, but it is smaller in length, the diameter. There are no [illegible] valve also known as the type bronze and [illegible] valve shown in all. Thermal construction.

The fitting, the diameter, and [illegible] are identical with those in construction in both types.

Operation The operation of the valve is identical to that of the type 85 large 5⅝ × ⅝ inch. From The Fourth revised by research and mechanical forces and from upon support

FIG. 24 Mechanical Fuzes (Pa. Projectiles)

Chapter 4

NAVY AMMUNITION

COLOR SYSTEM FOR LARGE-CALIBER PROJECTILES

[illegible] of the big project [illegible] simple and [illegible] [illegible] information [illegible] forward spaces and important [illegible].

[illegible] following [illegible] to [illegible] of [illegible]

[illegible]	[illegible]
Red	[illegible]
Yellow	[illegible]
Gray	[illegible]
[illegible]	[illegible]
White	[illegible]

Color of [illegible] [illegible] of the [illegible] of the projectile as follows:

[illegible] Indicates [illegible]

[illegible] Indicates [illegible]

[illegible] applied to [illegible] projectiles, [illegible] [illegible] in the [illegible] [illegible] projectile.

[illegible] for those [illegible] and [illegible] [illegible] for the [illegible] and [illegible]

The [illegible] of [illegible] the [illegible] [illegible].

Color of [illegible]. The [illegible] of [illegible] [illegible] [illegible] the [illegible] of [illegible] the color of the projectile body.

Color of body	Color of band	Meaning of band
[illegible]	Yellow	[illegible]
White	Red	[illegible]
[illegible]	[illegible]	[illegible]

The [illegible] [illegible] projectiles [illegible] [illegible] required.

Additional [illegible] identification.

A [illegible] [illegible] of [illegible] of projectiles [illegible] type [illegible].

[illegible] bands [illegible] are not [illegible]. The [illegible] is [illegible] painted.

[illegible] of the body [illegible] band [illegible] projectiles [illegible] projectiles [illegible].

[illegible] projectile [illegible] to distinguish [illegible].

Process marks [illegible]

八八

王子

汉

陈

乙

特别特别

特别指

种

製

绘

象

博5

巴4

编18-21

Running head marking

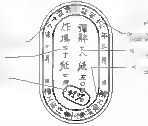
亚

巴 巴 巴 巴

巴

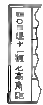
CO TO NAVY AMMUNITION

Proportional to etc



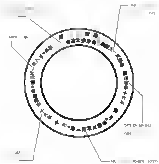
Proportional to etc

EXAMPLE



[illegible]

[illegible]



COLOR SYSTEM FOR SMALL-CALIBER PROJECTILES

[illegible] **(Antiaircraft antitorpedo) weapons.** [illegible]

(Antiaircraft antitorpedo) weapons. [illegible]

Alternate numbers. [illegible]

(Antiaircraft antitorpedo) weapons. [illegible]

[illegible] FOR SMALL-CALIBER PROJECTILES

[illegible] 19[illegible] 19[illegible] [illegible] 19[illegible] [illegible] [illegible] [

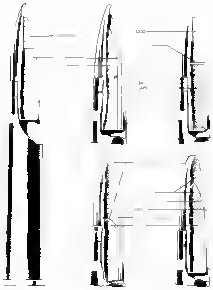


Fig. 4.—Ian Arisaki 4th Year Gun Ammunition.

NAVY PROJECTILES

AP, Armor Piercing (Full Jacket) Shot

Shell	Shell	Sensitivity	Tracer
Low	2% Mild	Blue-violet	Low
Low	Low	Blue-violet	Low
Low	Low	Violet	Low
		Violet	3%

Type	Projectile Jacket	Projectile Core
[illegible]	C [illegible]	Lead
[illegible]	[illegible]	Steel
[illegible]	C [illegible]	Lead
[illegible]	Brass	W. P. and red.
[illegible]	Brass Copper	[illegible] and lead
[illegible]		

Type	Projectile Color
[illegible]	Black
[illegible]	Black
[illegible]	Red
Sensitivity	Green
[illegible]	Purple

Remarks: The tracer is used [illegible] Nos. are [illegible]. Where [illegible] are [illegible] All shell [illegible] are [illegible]. These are [illegible] [illegible] Britain and [illegible].

The [illegible] A, A, V, D, and C. M. [illegible] are [illegible] and the [illegible] [illegible] [illegible] [illegible]

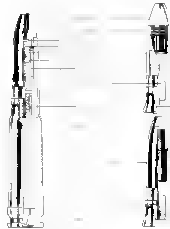


Figure 24 [illegible]

Figure 248— [illegible] Machine Gun [illegible]

[illegible]

	Color of shape
Ball	Black
[illegible]	Red
[illegible]	White
[illegible]	Yellow

[illegible]

Fig. 349—Type 89 70-kg. AP

Type 89 50-kg. Armor-piercing

FIGURE 154—Bloom High-Explosive Projectile.

Bloom High-Explosive Projectile

Weight
Weight of projectile (charged) 1.89 pounds
Length of projectile (charged) 3.38 inches
Length of complete round M.E. I, 4.09 inches, M.E. II, 4.04 inches
Filling: Pentolite 140 percent TNT 60 percent picric
W. ratio of filling: 0.34 oz. per cu. in.

Weight of empty shell 1.07 pounds
Length of empty shell 2.38 inches
Diameter of cylinder round M.E. I, 0.69 inches, M.E. II, 0.64 inches.

Fuze
Fuze: Bakelite and machined
Explosive: Fluid tetryl and granular pentolite
Primer: Lead azide and tetryl
Detail: Yellow enamel Dark brown enamel

Remarks: Accelerations Better results have been found to be not slightly more satisfactory than the Bloom case model.

[illegible]

[illegible]

20-mm High-Explosive-Tracer Projectile

Fuze:
Base projectile [illegible]
Mark [illegible]
Mark [illegible]
Mark [illegible] Mod 1
Mark [illegible] Mod 1
[illegible] Tracer: [illegible]
[illegible]

Weight of projectile: [illegible]
Length of projectile: [illegible]
Length of complete round: [illegible]
Filling: [illegible]
Weight of filling: [illegible]
Color and markings: [illegible]
Remarks: The body of all [illegible]

[illegible]

[illegible]—20-mm High-Explosive-Tracer Projectile.

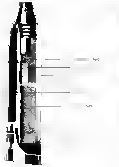


Figure 15.—35-cm High-Explosive Armor-Piercing Projectile.

35-cm High-Explosive Armor (Sub-Caliber 10) Projectile

[illegible]

Weight of projectile [illegible]

Length of projectile [illegible]

Length of complete round [illegible] 1, 2, 3, 5 series

Muzzle velocity [illegible]

Filling Fuze [illegible] 105 percent 7.2.7 10 pieces

[illegible]

Weight of filling of [illegible]

Color [illegible]

Remarks: The projectiles are similar to the [illegible] but differ in the anti-shattering [illegible] which is replaced by the [illegible] thread [illegible] projectile [illegible] power [illegible] bomb [illegible] as shown in the [illegible] 15. [illegible] 1. Filling is [illegible]

35-cm Armor-Piercing Incendiary Projectile

Length [illegible]

Weight [illegible]

[illegible] 14 [illegible]

Length of [illegible]

[illegible]

Firing [illegible]

Muzzle velocity [illegible]

Color [illegible]

Remarks: [illegible]

Weight of filling [illegible]

Color [illegible]

Remarks: The projectile is enclosed and has powered metal tube and [illegible] is [illegible] in the nose. The [illegible] filling [illegible] is [illegible] [illegible] of the projectile [illegible] of the [illegible] [illegible] the [illegible] [illegible] 15. [illegible] 1. [illegible] modification is similar [illegible] [illegible]

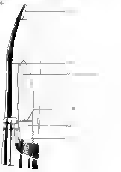


Figure 2.—35-cm Armor-Piercing Incendiary Projectile.

FIGURE 253—75-mm. Navy Projectile

75-mm Tracer Projectiles

[illegible]

30-mm Practice Projectile

[illegible]

FIGURE 254—30-mm. Navy Projectile

[illegible] Ammunition

[illegible] Ammunition

[illegible]

Length: [illegible]

Diameter of case: [illegible] inches.

Material: Brass.

Body capacity: [illegible] grams.

Propellant. [illegible]

Projectiles. [illegible]

[illegible]-mm High-Explosive Projectile

[illegible] Muzzle velocity [illegible] feet per second.
Weight of projectile [illegible] pounds.
Weight of bursting charge [illegible] pounds.
Filling:
Composition [illegible] [illegible] pounds.
Approximate [illegible] [illegible] feet.
Fuze and fuze range: [illegible] and [illegible].
Dimensions:
Length of projectile (without fuze) [illegible] inches.
Length of camera [illegible] inches.

Figure 300—[illegible]-mm High-Explosive Projectile.

Figure 301—5-mm High-Explosive Armor-Piercing Projectile.

5-mm High-Explosive Armor-Piercing Projectile

Muzzle velocity [illegible] feet per second.
Weight of projectile [illegible] (without fuze) [illegible] pounds.
Length of projectile [illegible] (with fuze) [illegible] inches.
Length of complete round [illegible] inches.
Filling:
TNT and [illegible] [illegible] ounces.
Fuze: [illegible] and [illegible].
Weight of projectile [illegible] and [illegible] pounds.
Tube and [illegible] [illegible] [illegible].

[illegible] High-Explosive Tracer Projectile

Fuzing: [illegible] Model [illegible]
Weight of projectile: [illegible]
Length of projectile: [illegible]
Length of [illegible]
Weight of [illegible]
Filling: [illegible]
Marking: [illegible]
Color and markings: [illegible]
Remarks: [illegible]

[illegible] High-Explosive Tracer (Self-Destroying) Projectile

[illegible]

[illegible] High-Explosive [illegible] (Self-Destroying) Projectile

Fuzing: [illegible] Model [illegible]
Weight of projectile: [illegible]
Length of [illegible]
Length of [illegible]
Filling: [illegible]
Weight of projectile: [illegible]
Color and markings: [illegible]

Remarks: [illegible]

Fig. 14. 32-cm Armor-Piercing Projectile.

32-cm Armor-Piercing Projectile

Fuzing: None.
Weight of projectile filled: 9.25 [illegible]
Length of projectile: 3.92 calibers.
Length of projectile-round: 3.76 calibers.
Filling:
Type: Picric acid, magnesium and [illegible] in [illegible].
Base material: Electric steel [illegible] chart.
Weight of projectile filling:
Base material: [illegible] grams (2.25 pounds)
Tip cap: 3.55 grams (3.54 grams)
Color and markings: Black [illegible], or [illegible] blue [illegible].

Remarks: This projectile is used in Japanese for [illegible] as armor-piercing although be [illegible] a rather thin shot used in smaller A. P. rounds.

Figure [illegible] — [illegible] Ammunition.

[illegible] Ammunition

[illegible]

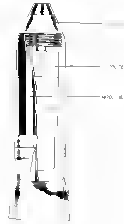


Figure 264—76-mm Type High-Explosive Projectile.

80-mm Type 3 High-Explosive Projectile

Purpose: To injure the enemy.

Weight: Projectile (without fuze): 6.5 pounds.

Length: Complete round: 31.5 inches.

Fuze: Type 3 Impact.

Color and markings: Matte olive drab.

Remarks: The projectile is in process, filled cartridge and by combustion.

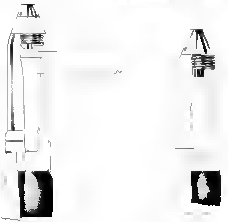


Figure [illegible]. Base Fused [illegible] 81-mm High Explosive [illegible]

[illegible] Type 1 and Type 2 [illegible] Base Fused Projectiles

[illegible]

[illegible]

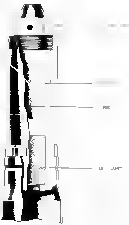


Figure 366—Type 5 [illegible] 155-Millimeter Female Projectile.

Type 5 [illegible] 155-Millimeter Projectile

Fuzing. Rotor type fuze.

Length of projectile [illegible] 8 in. inches.

Length of complete round. [illegible] inches.

Filling. Tremolite.

Other distinguishing. Red nose and red band at the base.

Remarks. The body of the projectile contains two circular expansions by which [illegible] The upper circle contains the H. E. filling, while the lower contains the charge.

Figure 26 [illegible] 5-mm Bomber Projectile

Type 5 20 mm Incen Projectile

Projectile [illegible]
Length of [illegible] [illegible] 15 [illegible]
Length of [illegible] [illegible] [illegible]
Filling [illegible]
Fuze [illegible] [illegible] [illegible] [illegible]
[illegible]

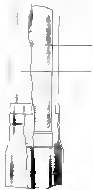


Figure 240—Longitudinal section H .79-mm Practice Projectile.

Type T *and Type S 19-mm Practice Projectiles*

Filling	Drawing type		
	weighted projectile	Type	Type
	without tracer	64 to 66	*S* reduce.
Length	*Maximum*		
	round nose	5.07 to 5.08	5.24 reduce.
Filling	Hand loaded		

Color and markings

Type	Black over all
Type S	Red, painted

Remarks In projectile had [illegible] a serious appearance for H .30 [illegible] round

H is used on the tracer round in [illegible] machine gun barrel.

Fig. 38 [illegible] Arrow Rocket Projectile

[illegible] Arrow Rocket Projectile

Weight of complete [illegible]
kg (18.7 pounds).
Weight of propellant [illegible]
kg (2.88 pounds).
Wing span [illegible] 1.810 kg
Filling: Chaff [illegible]
Length of tube [illegible] 5 inches.
Length of projectile [illegible] inches.

Propellant [illegible]
for 2.88 pounds
[illegible] and nitrocellulose
Ignition: [illegible]
[illegible] on Takisaka Arrow [illegible]

Length of propellant case [illegible] 18 inches.
Weight of complete [illegible] 0.18 lb. each.
Dimension of base of propellant case: 2.8 inches
Firing: Small A.P. base fuze

40-mm High-Explosive Antiaircraft Projectile

Weight [illegible] (complete round) [illegible] lb

Weight of [illegible]

Weight of [illegible] projectile [illegible]

[illegible]

Length of projectile (complete) [illegible]

Length of [illegible]

Length of projectile [illegible]

[illegible]

Remarks. [illegible]

Figure 372—40-mm High-Explosive Antiaircraft Projectile.

Figure 3[illegible]—15-cm [illegible]

[illegible] shell, nose fuzed

W[illegible] complete round [illegible]

W[illegible] projectile [illegible]

[illegible]

Length of projectile [illegible]

Length of cartridge case [illegible] 20 inches.

Length of [illegible]

Width of [illegible]

Diameter of [illegible] .48 inches.

Bursting charge [illegible]

Propellant: Charge [illegible] bundles of stickless [illegible]

Cartridge case [illegible]

Remarks: [illegible]

It is used in [illegible]

[illegible] (15-cm) Complete Round and Common Projectile

Assembled round:
- Weight of complete round [illegible] pounds.
- Length of complete round [illegible] inches.

Projectile:
- Weight of filled projectile [illegible] fuzed [illegible]
- Weight of projectile (empty) [illegible] pounds.

[illegible]
- Length of projectile [illegible] inches.
- [illegible]
- [illegible] inches.
- Width of rotating band [illegible] inches.

Filling: [illegible]

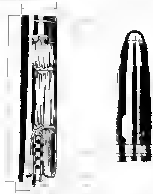
Fuze: [illegible]

Case:
- Length [illegible]
- Diameter at base [illegible]
- Material: Brass [illegible]
- Weight (empty) [illegible]
- The case [illegible]

Propellant: [illegible]

FIG. 5. Cutaway View of the Common Pneumatic Hammer

[illegible] is a common type of pneumatic hammer used in the construction industry. It is powered by compressed air and is used for various applications, such as breaking concrete, drilling holes, and driving fasteners. The hammer consists of a cylinder, a piston, a trigger mechanism, and a handle. The piston is driven by the compressed air and delivers a powerful blow to the tool or material being worked on. The trigger mechanism allows the operator to control the flow of air and the frequency of the blows. The handle provides a comfortable grip for the operator and contains the trigger mechanism and the air hose connection. The U.S. Bureau of Mines has conducted research on the vibration levels of pneumatic hammers and has developed guidelines for their safe use. The vibration levels can be reduced by using a vibration isolator or by using a different type of hammer.



[illegible] Complete Round (Sectioned)

[illegible]

[illegible] High-Explosive Projectile

[illegible]

[illegible] High-Explosive

[illegible] 27. —8 cm Rocket

8 cm (78.5 mm) [illegible] Round Projectile

[illegible]

462

[illegible]

Type [illegible] [illegible]

Type [illegible] [illegible]

8 cm (78.5 mm) [illegible] Complete Round (Fused)

Data:

Length [illegible]

Diameter of base [illegible]

Weight of filler [illegible]

Weight, overall [illegible] pounds

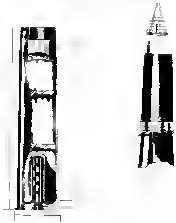
[illegible]

Propellant:

[illegible]

Weapons: [illegible]

[illegible]



[illegible]

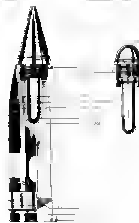


Figure 277 - 6 cm Rocket-assy Mk 2 Model 70 High-Explosive

6-cm (6.5mm) (2.56 inch) Cylinder Mk 5 (M 4) High-Explosive

Complete Round

Weight of rocket and 70 % propellant [illegible] sample [illegible] type 88

[illegible]

Mass [illegible] kg

[illegible] [illegible] seconds

Weight assembled [illegible] [illegible] 2.56 kg (rocket [illegible] 2.56 kg)

Rocket

[illegible] of propellant [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Initial [illegible]
[illegible]
Propellant:
Weight [illegible]
Type [illegible]
Type [illegible]

[illegible] powder [illegible] 18 [illegible]
[illegible] powder [illegible]
[illegible]

6-in. [illegible] Armor-Piercing Type [illegible] Special Common

Assembled round:
Weight of complete round [illegible]
Length of [illegible]

Projectile:
Weight of fired projectile [illegible] pounds
Weight of cap [illegible] pound
Weight [illegible]

Dimensions:
Length of projectile [illegible]
Diameter [illegible]
Distance [illegible]
Width of rotating band [illegible]
Radius of [illegible]

Filling: [illegible] pounds.

The [illegible]

Fuzing: Type [illegible]

Weapons in which used:
[illegible]
[illegible]

Figure 270—6-in. Armor-Piercing Type [illegible] Special Common.

Figure 179—[illegible]

[illegible] 56.8 mm [illegible] Projectile

Assembled round

Weight of complete round [illegible] data.

Length of complete round [illegible] mm

Projectile

Weight of filled projectile [illegible] data

Weight of propelling charge [illegible]

Muzzle velocity [illegible] m/sec

Muzzle pressure [illegible] kg/cm²

Dimensions

Length [illegible]

Diameter [illegible]

Diameter [illegible]

Weight [illegible] kg

Radius [illegible]

Filling

[illegible]

Fuzing [illegible]

Weight [illegible] g

[illegible]

6-cm 100-mm 3.9-inch Canal a Round (Fixed)

Type [illegible]

Length 28.35 [illegible]

Diameter at base [illegible]

Weight [illegible]

Weight [illegible]

[illegible]

[illegible]

Figure 357—[illegible]

[illegible] High Capacity Projectile

Assembled round:

- Weight of complete round: 45.10 pounds.
- Length of complete round, with type [illegible] fuze: [illegible] inches.

Projectile:

- Weight of filled projectile without fuze: [illegible] pounds.
- Weight of projectile empty: [illegible] pounds.
- [illegible]
- Length of projectile [illegible]
- [illegible]
- Diameter [illegible]
- Width of [illegible] band: [illegible] inches.
- Radius of ogive: [illegible]

Filling:

[illegible]

Fuzing:

[illegible]

Usage:

[illegible]

Figure 380—[illegible] Complete Round (Fixed).

[illegible] [illegible] Complete Round (Fixed)

Case

Length [illegible] inches.

Weight of case [illegible]

Material [illegible]

[illegible]

The case is crimped tightly into groove in [illegible] the projectile [illegible]

Propellant

[illegible] [illegible] pound [illegible]

[illegible]

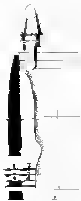
The propellant [illegible]

[illegible] flag of the [illegible]

Primer [illegible]

[illegible]

[illegible]



[illegible] Shell [illegible] High-Explosive

[illegible]

[illegible]

[illegible] (20-mm) [illegible] Complete Round (Test Load)

Length [illegible] inches

[illegible]

[illegible]

Weight [illegible] pounds

Fig. 184 [illegible] Complete Round [illegible]

Propellant: [illegible] powder. [illegible] Type [illegible] mainly [illegible] addition [illegible] colored [illegible] The propellant [illegible] of [illegible]

Primer: [illegible] percussion primer. [illegible]

Weapons in which used:

Type [illegible] gun (two angle).

This [illegible] [illegible]

[illegible] gun (two angle).

[illegible]

The following [illegible] [illegible] [illegible] available.

Type [illegible]

[illegible]

[illegible] (Ordinary Mk 5)

Weight [illegible] pounds.

Weight of projectile, [illegible] pounds.

[illegible]

Length [illegible]

Diameter [illegible]

[illegible]

Filling: [illegible] The charge [illegible]

Weapons in which used:

Type [illegible] (two angle).

Type [illegible]

Type [illegible] (two angle).

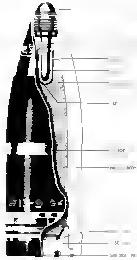


Fig. 197—75-mm Shrapnel Shell, M 19 (Sectional).

[illegible] (4.7-inch) High-Explosive (Shell [illegible] Mk 4)

[illegible] of projectile Mk 4 with [illegible] fuze Mk [illegible]
[illegible] of projectile weight 50 lb [illegible]
[illegible] projectile weight [illegible] lb
[illegible] projectile [illegible]

[illegible] Range
Type 88 mechanical time fuze.
Type 88 percussion fuze.
Weight of fuze used
Percussion type 5-oz gas fuze angled
Type [illegible] 5-oz gas fuze angled.

Figure 28. 4.7-in Projectile Mk 4 High-Explosive.

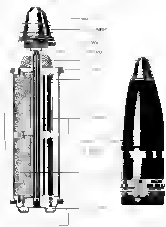
Figure 38.—8-cm. Common.

8-cm (7.59-cm) 41 J-Inch Common Projectile

Weight of filled projectile with [illegible] cap: [illegible] lb.
Weight of empty projectile: 14.30 [illegible] lb.
Length of projectile: 30 inches.
Diameter at shoulder: [illegible] inches.
Diameter from base to [illegible] ring band: [illegible] inches.
Width of rotating band: [illegible] inches.
Radius of ogive: [illegible] calibers.
Filling: Picric acid (Shimose): [illegible] lb.
Fuzing: Type [illegible]: [illegible] lb.
Weapons in which used:
Small type 8-cm: [illegible] kg.
Type 3-cm: [illegible] kg.
Type [illegible]: [illegible] kg.

7-in (178mm) (A Mark) Bombshell
Figure 10

Weight of filled projectile [illegible] lb 10 oz
Weight of empty projectile [illegible] lb 0 oz
Weight of bursting charge [illegible] lb 0 oz
Length of projectile [illegible] [illegible] 17 in
Diameter of projectile [illegible] [illegible] 7 in
Capacity of projectile [illegible] [illegible] 1 cu in
Capacity of base to bursting [illegible] 3 cu in
Weight of bursting charge [illegible] lb 0 oz
Number of rifling [illegible]



[illegible] 20[illegible] [illegible]

dia., threading depth [illegible] grooves [illegible] apart.

Description: There are [illegible] cylinders arranged in the bomb [illegible] cylinders each. A cylinder is made of [illegible] sheet metal [illegible] the other cylinders [illegible] the center and [illegible] as shown in [illegible].

Weight (one cylinder): [illegible]

Analysis of Contents:

[illegible] percent

[illegible] percent

[illegible] percent

Wax [illegible] percent

Carbon [illegible] percent

[illegible] percent

Analysis of [illegible]:

Potassium [illegible] percent

[illegible] percent

[illegible] percent

Sulphur [illegible] percent

Wax [illegible] percent

Glass [illegible] percent

Carbon [illegible] percent

Cylinder metal base:

The base [illegible] of the cylinder and is [illegible]. There are [illegible] each of which is [illegible] [illegible] [illegible].

Fuzing: [illegible] time fuze.

Weapons in which used:

Type [illegible] bomb [illegible]

Type [illegible] bomb [illegible]

Operation: When the [illegible] [illegible] the [illegible] from the fuze [illegible] [illegible].

[illegible] (190-gr [illegible] [illegible] [illegible])

Weight of filled [illegible]
[illegible]
Weight of case to projectile [illegible] mm
Weight of charge of [illegible] rotating band [illegible]
[illegible] (gunpowder with individual [illegible])

Length of projectile without base	1.00 inches.	Filling	No data.
Diameter at [illegible]	0.77 inches.	Fuzing	Nonexistent. time base
Distance from base to rotating band	.06 inches.	Weapon in which used	
Width of rotating band	.06 inches.	Type	[illegible]
R. data of [illegible]	[illegible]	Type [illegible]	[illegible]

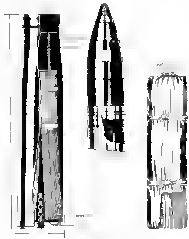


Figure 69—75-mm Gun-Howitzer Shell (Front).

8-cm (Millimetres) Gr. (Shell) Copper-Band Shrapnel (Front).

Case

Length 17.43 inches.
Diameter of base 6.34 inches.
Material Brass.
Weight (empty) 15 pounds.

The [illegible]
[illegible]
[illegible]
Projectile [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible] bands.

[illegible] of projectile [illegible] as the [illegible] the [illegible] The [illegible] may be [illegible] made loaded in the cases in which it was first [illegible].

Fuzes: [illegible] percussion, [illegible]

Weapons in which used: Type [illegible] gun; [illegible] purpose gun.

This weapon is [illegible] designed for [illegible] been found [illegible] of [illegible] gun [illegible] sliding to the right. This has [illegible] had found [illegible]

3-cm 150-mm (6 inch) High-Explosive (Ordinary Shell)

Assembled round:
Weight of complete round: [illegible] pounds.
Length of complete round [illegible] type [illegible] approximately.

Projectile:
Weight of filled projectile [illegible] fuze): [illegible] pounds.
Weight of empty projectile: [illegible] pounds.
Weight of [illegible] (nominal [illegible]).

Dimensions:
Length of projectile [illegible] fuze: [illegible] inches.
Diameter [illegible]

Fuz [illegible]

[illegible]

Filling:
[illegible]

Fuzes:
[illegible]
Type [illegible]

Weapons in which used:
Type [illegible]

Remarks: The base is [illegible] of the percussion [illegible] identical. The [illegible] of the percussion [illegible] the base of the projectile. A similar fuzzer is common to [illegible] projectiles.

18-cm (7.09-in) (4.24 kg) High-Explosive (Type 88) Shell

Assembled round

Weight of assembled round 13.24 pounds.

Figure [illegible] 18-cm (7.09-in) Type 88 High-Explosive.

Length of round [illegible] 22.2 inches.

Projectile

Weight of filled projectile [illegible]

Length of projectile [illegible]

Weight of empty projectile [illegible]

Weight of [illegible] projectile [illegible]

Dimensions

Length of projectile [illegible]

Diameter [illegible]

Distance from [illegible] base [illegible]

Fuze

Type of fuze [illegible]

Fuze [illegible]

The fuze consists of [illegible] and [illegible] and [illegible] a [illegible] long and [illegible] in diameter and weighs [illegible] pounds.

Fuzing

Type 9 mechanical time fuze [illegible] the point detonating fuze.

Propelling charge [illegible] Type 88 [illegible] charge.

8-cm (3.15-in) (6.3-kg) Illuminating Shell

Assembled round

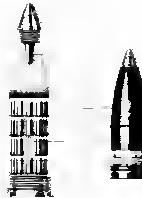
Weight of complete round [illegible] pounds.

Length of cut [illegible] inches.

Projectile

Weight of filled projectile [illegible] pounds.

Length of projectile [illegible] inches.



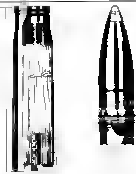


Figure [illegible]—4.7-cm Complete Round [illegible]

4.7-cm (47-mm) [illegible] Complete Round (Fixed)

Case:

Length: [illegible]

Diameter of rim: [illegible] inches

Material: Brass

Weight, empty: [illegible] pounds

[illegible]

Propellant:

[illegible]

[illegible]

[illegible] (8-Inch) High-Explosive

[illegible] 335 pounds.

[illegible]

FIG. [illegible].—8-Inch High-Explosive [illegible]

Dimensions
Length of projectile [illegible] inches.
Diameter at bourrelet: [illegible]
Distance from base to rotating band [illegible] inches.
Width, rotating band: [illegible]
Radius of ogive: [illegible]

Filling
[illegible]

Fuzing
[illegible]

Weights of fuzes and [illegible]
[illegible]

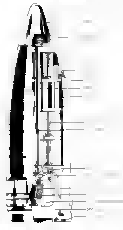
[illegible] (8-Inch) [illegible] Projectile

Assembled round
Weight of complete round: [illegible]
Length of complete round: [illegible]

Projectile
Weight of filled projectile: [illegible] pounds.
Weight of empty projectile: [illegible]
[illegible]

Dimensions
Length of projectile: [illegible] inches.
Diameter at bourrelet: [illegible]
Distance from base to rotating band: [illegible] inches.
Width of rotating band: [illegible]
Radius of ogive: [illegible]

Filling
[illegible] pounds.
[illegible] pounds.



Proximity Fuze (Proximity Type 2).

[illegible]

[illegible] Type [illegible] [illegible] Fuze [illegible] [illegible]

[illegible] [illegible] [illegible] [

FIG. 79 | 88 Pounder

2.1-in (12 cwt) (3-inch) Pounder

Assembled round

Weight of complete round 7.5 lb. 3.4 kgs.
Length of complete round 16.38 inches

Projectile

Weight of H.E. projectile 6.75 lb. 3.0 kgs.
Weight of empty projectile 4.5 lb. 2.0 kgs.
Weight, assembled, including base charge, 6.75 lb. 3.0 kgs.
Length, overall, with fuze 11.5 inches

Dimensions

Length projectile 7.25 inches
Diameter, overall 2.95 inches 75.0 mm.
Distance from base to rotating band 4.5 inches
Width of rotating band 0.4 inches
Radius of ogive 6 cal
Fitting fuze
Fuzing fuzes
Weapon in which used Type 88 — 3-inch Anti-aircraft gun

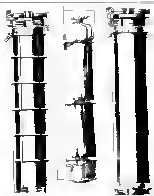


Figure 89—T-6 on Pagoda and Tank

Action [illegible]

[illegible] to pass the [illegible] [illegible] [illegible]

[illegible] High-Explosive Projectile

[illegible]

[illegible]

[illegible]

[illegible] Anti [illegible] (148 mm) (5.3-Inch) [illegible] Explosive Projectile

[illegible]

(Obsolete) Ammunition, 14-cm (5.5-inch) Common Projectile

[illegible]

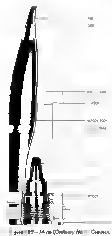


Figure 87—14-cm (Obsolete) Common.

Figure 40.—Shell 75 Cannon Model 90

Chemical Shell 3 Inches (76 mm) (34kg)

Contents Compound

[illegible]

Fuze

[illegible]

Fuzing Type [illegible]

[illegible]

[illegible] Projectile

[illegible]

Primary explosive charge [illegible]

Secondary explosive charge [illegible]

Initiating [illegible] black powder

The [illegible]

[illegible]

Weight [illegible]

[illegible]

Description. [illegible]

[illegible]

[illegible]

Figure 8 Mine Bouée.

Mine (500 mm) (19.5-inch) Sea E Projectil

[illegible]

[illegible]

[illegible] Cartridge Case

(Sectioned)

Case:

Length [illegible] inches

Diameter at base [illegible] inches

Material: Brass

Weight (empty) [illegible] pounds

Propellant: [illegible] propellant sticks are enclosed in bag [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Figure [illegible]—[illegible] Cartridge Case (Sectioned)

8-cm (3.15-inch) 75-kilo(165-pound) Gas-filled Shell (Sensitive)

[illegible] 8.220 inches
27.07 lbs. 6.68 inches
[illegible] 15 lbs.
[illegible] smooth
[illegible]
[illegible]
[illegible]
[illegible]

Figure 407 8-cm Gas-filled Shell (Sen[illegible]) [illegible]

[illegible] of [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible] Common (Ordnance Mark [illegible])

Type of Shell: [illegible]

Shape of [illegible] projectile: [illegible]

Weight of [illegible] including band, [illegible]

[illegible] projectile: [illegible]

Length of projectile: [illegible] inches.

Diameter at bourrelet: [illegible] inches ([illegible]).

Diameter [illegible] rotating band: [illegible] inches

Width [illegible] inches.

[illegible]

Filling: [illegible]

[illegible]

[illegible]

Figure [illegible] Common

Figure [illegible]—15-cm (149-mm) Type [illegible] High-Explosive.

(Ordnance type [illegible] 15-cm (149-mm) [illegible] High Explosive

Weight of [illegible] projectile [illegible] pounds.

Weight of [illegible] [illegible] pounds.

[illegible]

[illegible] Mk [illegible] (10.5 in.) [illegible]
Common

[illegible]

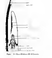


Figure [illegible] Common

3-cm (1.2-in. (3-inch)) coastal-defense shrapnel

Weight of filled projectile [illegible]

Weight of empty projectile [illegible]

Weight of bursting charge [illegible]

Length of projectile [illegible]

Length of projectile [illegible]

Length of projectile [illegible]

Length of projectile [illegible]

Length of projectile [illegible]

Length of projectile [illegible]

Length of projectile [illegible]

Length of projectile [illegible]

[illegible] Practice Projectile [illegible]

[illegible]

Remarks. [illegible]

[illegible]

figure [illegible] Kaiten [illegible] Model

(Ordnance [illegible]) [illegible] 55 m.

(1) Jacket [illegible] Explosive

[illegible]

[illegible]

[illegible]

[illegible] Ox-bow (1[illegible]—[illegible]) Ox-bow [illegible]

A [illegible] Pheasant

[illegible]

[illegible]

Overall [illegible]

Length [illegible]

Diameter [illegible]

Weight [illegible]

Material [illegible]

Finish [illegible]

Radius of curve [illegible]

[illegible]

[illegible] 55. [illegible] [illegible] 77

Figure 1—15.5 cm Howitzer.

5 [illegible] Showed Up. Good Handbooking

[illegible] of about [illegible] for [illegible] [illegible] K [illegible] [illegible] [illegible] [illegible] [illegible]

Weight [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Length [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Figure 8-16. [illegible] Complete Round [illegible]

[illegible]

[illegible] and [illegible] [illegible] and light [illegible] [illegible] originally [illegible] [illegible] The [illegible] [illegible] [illegible]

This [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Ordnance Mk. 1 90-mm/28cal (1929——)
(Type 3) High-Explosive

[illegible]

[illegible]

90 mm Shell (Type 3) High

Figure 419—Pitman Hammer, type H, Armor-Piercing.

Type 91 10-cm (3.93-inch) Armor-Piercing

Weight of shell complete, 33.5 kg (74 pounds)

Weight of empty projectile, 15.5 kg (34 pounds)

Weight of tracer or cake of tracer composition, 0.5 kg (1 pound)

Length of projectile, 50.48 cm (19.88 inches)

Length of tracer, 20 cm (7.87 inches)

Length of cake of tracer composition, 20 cm (7.87 inches)

Length of base, 5.08 cm (2 inches)

Diameter of base, 10.16 cm (4 inches)

Diameter of rotating band, 10.16 cm (4 inches)

Width of rotating band, 2.54 cm (1 inch)

Type of rotating band, copper

Muzzle velocity, 792 m/s (2,600 feet per second)

Initial velocity, 762 m/s (2,500 feet per second)

Maximum pressure, 2,700 kg/cm² (38,400 pounds per square inch)

Type of fuze, Type 97 Fuze, Mk. 1

Weight of fuze, 0.5 kg (1 pound)

Length of fuze, 15.24 cm (6 inches)

Diameter of fuze, 3.81 cm (1.5 inches)

Type of explosive, Type 97 Explosive

Weight of explosive, 0.5 kg (1 pound)

Type of gun, Type 91 10-cm (3.93-inch) Anti-aircraft Gun

Figure 3-6—Type 89 (Medium) Bomb (Nakajima)
Shell—Explosive.

150-mm 105-mm (Shell) Cartridge Case (Semi-fixed)

Case

Length 23 inches.

Diameter at base 13.39 inches

Material Brass.

Weight 6 lbs 4 pounds.

Propellant

Type Type 99 propellant

(2.0 lbs)

Charge/Cartridge [illegible]

Ignition [illegible]

Primer [illegible]

Weapon [illegible]

Figure 490—20 Cast in Core (enclosed)

Figure 42 [illegible]

36-cm (355-mm) (14-inch) Armor-Piercing

Weight of Shell projectile [illegible] 1,400 [illegible]
Weight [illegible] projectile [illegible]
Length [illegible] projectile [illegible]
Charge [illegible] [illegible]
Largest [illegible] [illegible]

[illegible] 480-mm [illegible] Mk 1 Armor Piercing

[illegible] of [illegible] [illegible] [illegible]

EXPERIMENTAL

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]		[illegible]		[illegible]		[illegible]		
[illegible]	[illegible]		[illegible]				[illegible]		
[illegible]	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]				[illegible]		
[illegible]	[illegible]		[illegible]				[illegible]		
[illegible]	[illegible]		[illegible]				[illegible]		
[illegible]	[illegible]		[illegible]				[illegible]		
	[illegible]						[illegible]		

[illegible]

[illegible]

[illegible]

NAVY ROCKETS

[illegible]

[illegible]

Filling

[illegible]

Tracer [illegible]

Motor

[illegible]

Propellant

[illegible]

Color and markings

[illegible]

Remarks [illegible]

[illegible] (5-inch) High-Explosive Spin-Stabilized Rocket

Assembled round:

- Weight of complete round with fuze: [illegible] pounds
- Length of complete round, without fuze: [illegible] inches

Head:

- Weight of fitted head (without fuze): [illegible] pounds
- Weight of charge: [illegible] pounds
- Length of head: [illegible] inches
- Diameter of head: [illegible] inches

Filling: [illegible]

Fuzing: Type [illegible]

Motor:

- Weight of filled motor: [illegible] pounds
- Weight empty: [illegible] pounds
- Length of motor: [illegible] inches
- Diameter of motor: [illegible] inches
- The nozzles are offset at [illegible] of the tube.

Propellant:

[illegible]

Igniter and reference:

- Igniter: [illegible]
- Igniter charge: Black powder [illegible]

Color and markings:

[illegible]

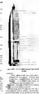


Figure [illegible]—5-inch High-Explosive Spin-Stabilized Rocket.

[illegible]

Remarks. [illegible]

Figure [illegible]—[illegible] High-Explosive Spin-Stabilized Rocket.

[illegible] High-Explosive Spin-Stabilized Rocket

[illegible]

Weight [illegible] pounds [illegible]

Length of rocket overall [illegible]

Diameter of rocket [illegible]

Filling:

[illegible]

Fuze:

[illegible]

Motor:

Weight of filled motor [illegible] pounds.

[illegible]

Length of motor [illegible]

Diameter [illegible]

The [illegible]

Propellant:

[illegible]

The [illegible]

Ignition and detonator:

[illegible]

Remarks: [illegible]

Chapter 3—Section 9

NAVY MORTARS

Type 3 81-mm High-Explosive Mortar

Weight complete: [illegible]
Weight with charge: [illegible] pounds
Explosive: [illegible]

Picric [illegible]
[illegible]

Overall length: [illegible] inches
Length of assembly: [illegible] inches
[illegible] diameter: [illegible] inches
[illegible]
[illegible]
Color and markings:

[illegible]

Fuzing: Type [illegible] fuze.
Propelling charge: [illegible]

Description. [illegible]

Figure [illegible]—Type 3 81-mm High-Explosive Mortar

Chapter 5—Section 4

NAVY PROJECTILE FUZES

Fig. [illegible] 20 mm Mark [illegible]

20-mm Mark [illegible]

[illegible]

Construction. The [illegible]

and then the lower fuze body and is supported by safety fork detent to hold in place [illegible] the pellet. The pellet [illegible] into the [illegible] of the fuze body.

Operation. On firing, the [illegible] the [illegible] the spring, thus releasing the [illegible] [illegible] moves the safety fork [illegible] [illegible] of the [illegible] [illegible] of the projectile. [illegible]

Remarks. There [illegible] of this fuze [illegible] projectiles. [illegible] the Model [illegible] only in use.

20-mm Model [illegible] Impact Fuze

Used in: 20-mm projectiles.

Overall length [illegible]

Overall length [illegible]

[illegible]

Threaded length: [illegible]

Number of threads: [illegible]

Construction. [illegible]

Operation. [illegible]

Figure 18—75-mm Model 3 Fuze.

75-mm Model 3 Impact Fuze

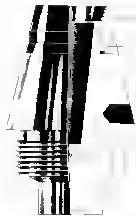
This fuze is provided in:

Overall length (with pellet) 7½ inches.
Overall length (without pellet) 5¼ inch.
Maximum diameter 2½ inch.
Threaded length ½ inch.
Number of threads 6.

Construction. There are two versions of this fuze, differing only in the base plug, one of the plugs containing and the other is of the point construction, but of the same overall length. Between the base plug and the point is a cup shaped cup in which is a pellet of explosive and a detonator.

Operation. There are no arming features in this fuze. The primer, the detonator, the pellet, the detonator, and the base plug are provided in the cup, and the base plug is screwed into the cup.

Figure 19—75-mm Model 3 Fuze.



[illegible] Model [illegible]

[illegible]

[illegible]

[illegible] Model [illegible]

Figure [illegible]—[illegible] Model [illegible] Fuze

[illegible]-mm Model [illegible] Fuze

[illegible] projectiles. [illegible] (total length) [illegible] [illegible] length [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible]

Operation. [illegible]

Remarks. This [illegible] [illegible]

Fig. Non-Delay (Mark) [illegible]

Sec. Delay Impact [illegible]

[illegible] ch [illegible] ex [illegible] ex [illegible] ex

Type III Mass Fuze

[illegible] projectile [illegible] [illegible] [illegible] [illegible] Cart. [illegible] [illegible] ordinary projectiles (bag), ordinary projectiles (bag), ordinary projectiles (bag), ordinary projectiles (bag), ordinary projectiles (modified)

[illegible]

Construction. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] plunger. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Figure [illegible] Type III [illegible] Mass Fuze

charge hold [illegible] forward portion by [illegible] The head of the phosphorus [illegible] and [illegible] [illegible] [illegible] [illegible] distance.

The [illegible] [illegible] [illegible] [illegible] [illegible]

The [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] plug.

Operation. [illegible] [illegible] [illegible] [illegible] [illegible] second [illegible]

Type 90 Model 1 Phos Fuze

Over-all length [illegible]
Over-all length [illegible]
Maximum diameter [illegible]
Thread length [illegible]
Type of threads [illegible]

Construction. This fuze differs from the Type 88 and the Type 89 [illegible] in the following respects:

The point is [illegible] screwed externally [illegible]

A. Three [illegible] set-back plunger as safety.

B. A [illegible] spring [illegible] and [illegible] the setting [illegible]

Operation. [illegible] [illegible] [illegible] [illegible] against the [illegible]

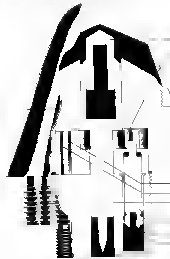


Figure 12—gun 30 Model 4 Instantaneous-Delay Fuze.

gun 30 Model 4 Instantaneous-Delay Fuze

as Ordinary projectiles for Arch 30-cm short gun

Overall length (with guide) 8 inches

Threaded length 1 inch

Diameter 6

Construction The fuze body is made of brass [illegible] The [illegible] which holds the detonator is [illegible] and the free centrifugal weight which [illegible] the primer. The [illegible] is held in place by a stud [illegible] The [illegible] is held in position by [illegible] which [illegible] is retained by [illegible] The [illegible] is secured by [illegible] screw [illegible] to the [illegible] screw.

[illegible]

[illegible] which [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Type 8 Mine Fuze

[illegible]

[illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]

Material of body: [illegible]

Threaded length: [illegible]

Type of [illegible]: [illegible]

Operation. The fuze is a [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Figure [illegible]—Type 8 Mine Fuze.

[illegible] the base [illegible] the booster [illegible] the fuze. The lower [illegible] the tube [illegible] the striker [illegible] the base [illegible]

[illegible]

Operation. [illegible]

Fig. 18 [illegible]

[illegible] Nose Fuze

[illegible]

Overall length [illegible]

Overall length [illegible]

Maximum diameter [illegible]

Threaded length [illegible]

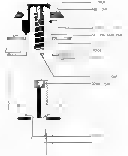
[illegible]

Construction. The fuze body [illegible]

Operation. The impact [illegible]

[illegible] Powder Train Fuze

[illegible]



Type [illegible] Axial Bust–Impact Nose [illegible]

[illegible]

[illegible]

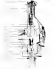


Figure [illegible] Type [illegible] [illegible] Fuze

[illegible]

Operation. [illegible]

10-Second Powder Time Fuze

[illegible]

Figure [illegible]—10-Second Powder Time Fuze.

[illegible]

[illegible] Mechanical Time Fuze

[illegible]

Overall length [illegible]

Maximum diameter [illegible]

Threaded length [illegible]

[illegible]

Construction: [illegible]

Operation: [illegible]

Function: [illegible]

Figure 64—Type 1 Mechanical Time Fuze

is rotated sufficiently to bring the notch into alignment with the inner end of the stop arm, the detent release arm moves outward under the influence of its spring pushing the inner end out of the notch of the setting disk. When this happens, the arbor release arm moves out of contact with the detent which is therefore free to move into the primer or initiating detonation of the projectile on the [illegible] of the ordnance piece.

Remarks: There is a modified version of this fuze that has [illegible] setting. This is used on the 105mm [illegible] 3.5 in. A.A. gun which has an automatic setting device.

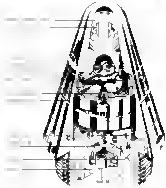


Figure 495.— Type B Mechanical Time Fuze.

Type B mechanical Time Fuze

Use: Ordinary projectiles for the 8-in. and 10-in. siege guns.

Diameter: 3.1 in. or 3.9 in. inches.

Maximum diameter: 3.9 in. inches.

Overall length: 5 inch.

Number: Model A.

Construction: This fuze is the same as the type B Mod. except that it has another safety spring and has a flash shutter in the base portion. Model A is modified from the type B Mod. by the addition of

Operation: The operation is the same as the type B Mod. except that the flash shutter in the base, which brings both flash and centrifugal force into operating on the fuze.

Type 98 Mechanical Time Fuze

[illegible]

Remarks: This fuze [illegible] in the upper [illegible] Type [illegible] [illegible] 75-mm [illegible] & 75-mm [illegible] is fitted in conjunction with the [illegible] Type 3 fuze.

Operation: This type [illegible] operated the [illegible] Type 3 fuze.

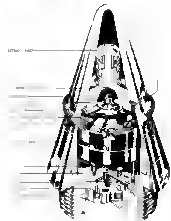


Figure 66—Type 98 Mechanical [illegible]

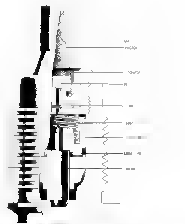


Fig. 4.—Pelorus Fuze.

Section 3 — 4.

This device is 2" [illegible] diam. Overall length 18 [illegible] 3 in. Thread length [illegible] 1 inches. Shell thickness [illegible] 1 inches. Threaded length [illegible] 1 in. [illegible]

Construction [illegible] cylindrical metal piece is forged, cut to length and internally drilled to provide a recess to house and guide the striker, striker weight, and coil spring. It is threaded to [illegible] on by lowering [illegible] to take the gaiter. The striker is lowered and secured to the fuzeto shell by [illegible] screw pin. The striker weight is [illegible] cylindrical shape, [illegible] the lower opening of the [illegible] and is held in the recess provided by the coil spring resting between the striker weight lower end an annular groove in the forward end of the fuzeto weight.

Operation. [illegible] the striker weight, striker is forced forward, breaking the shear pin and releasing the striker. Upon impact the striker and collar is rm against the cross spring and the firing pin pierces the primer.

3-cm Shell Fuze

Case [illegible] [illegible] pounds
Overall length [illegible] in. [illegible]
Diameter of threaded portion [illegible] in. [illegible]

Construction: The base portion of a metal cylinder is externally threaded and slotted centrally to take [illegible] metal blade in which [illegible] for [illegible] is formed. The striker [illegible] the pin. The end of the fuze is closed by the primer [illegible]

Operation: Before firing, the striker rests against the base of the fuze and, [illegible] primer, when the striker has [illegible] the fuze is [illegible] the striker blade [illegible] the [illegible] and [illegible] the [illegible] proceeding. On impact both the [illegible] and [illegible] move forward [illegible] the primer.

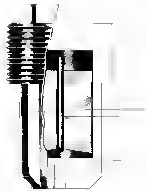


FIGURE [illegible]—3-cm Shell Fuze

Type [illegible] Base Impact Fuze

[illegible]

Construction. [illegible]

Operation. On striking the target [illegible]

Figure [illegible]

[illegible]

Type [illegible] [illegible] fuse

[illegible] projectiles.

[illegible]

Construction: [illegible]

[illegible]

Operation: [illegible]

Figure 481.—Type 3-Year Mk 4 and Mk 4 Fuze.

Type 3-Year Mk 4 and Mk 4 Point Base Fuzes

Use

Type 3-year Mk 3 for type M A 7

Type 15-year Mk 3 for type M A 7

Overall length with protective sleeve 3 inches, 15 inches

Threaded length 2 inches, 1 inch

Number of threads 8 18

Construction The design of these fuzes is almost identical to the type 15-year M [illegible] but differing only in size and minor modifications. The pellet, however, is different in structure from that used in the 15-year fuzes in primer delay, color indicator and booster.

Operation The operation of this fuze is the same as the 15-year M [illegible]

APPENDIX TABLE I

[illegible]

Fraction	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible] TABLE 3—Continued

[illegible]

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